CONVENTION ISSUE

INFORMATION LETTER

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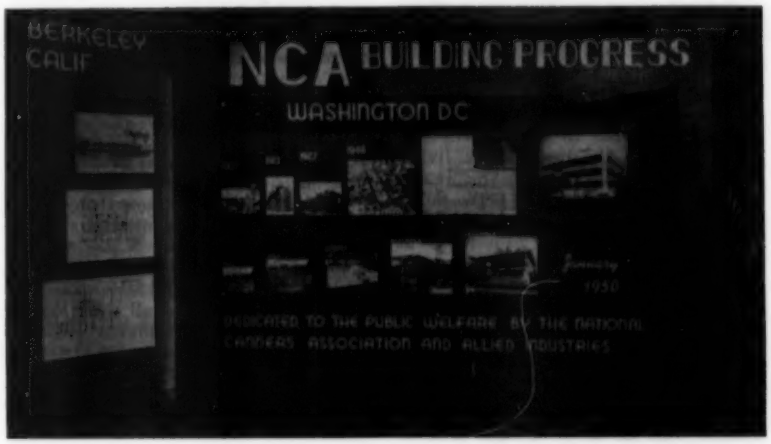
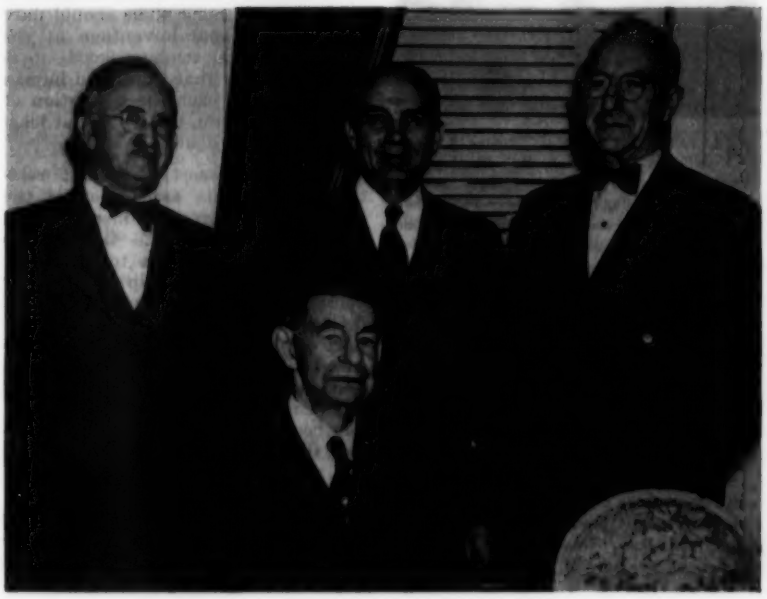
Proceedings of the 43rd Annual Convention

SALES AND PROMOTION INTERESTS SATISFIED BY ARRANGEMENTS ENABLING THEM TO MAKE ALL ESSENTIAL BUSINESS CONTACTS


BERKELEY
CALIF
NCA BUILDING PROGRESS
WASHINGTON DC
DEDICATED TO THE PUBLIC WELFARE BY THE NATIONAL CANNERS ASSOCIATION AND ALLIED INDUSTRIES

ABOVE—This is the exhibit depicting progress of the Association's building program, shown in Convention Hall. The photos pictured the steady progress made in construction during the past year.

RIGHT—The 1950 officers of the National Canners Association: (left to right, standing) Henry P. Taylor, president; Carlos Campbell, secretary; Herbert J. Barnes, vice-president. (seated) Frank E. Gorrell.



Convention Issue

This issue of the INFORMATION LETTER is devoted to the proceedings of the 43rd Annual Convention of the N.C.A. adjourned last week in Atlantic City. It carries a running account of various meetings and reproduces texts of the papers and addresses made at the sessions. This 80-page Convention issue compares with the 92-page book published last year, and was in the mail 4 days following the close of Convention, compared with 5 days in 1949.

CANNERS drew confidence from the feeling on the part of distributors at the 1950 Convention that canned food packs, in general, will move out in orderly fashion. Some of the pre-convention forecasts had been on the pessimistic side and many Convention delegates who had expected a gloomy session were pleasantly surprised at the cheerful and reassuring atmosphere encountered in Atlantic City. Members of the three co-sponsoring associations — the

STATEMENT ON TAKING OFFICE AS PRESIDENT

By Henry P. Taylor

Any organized activity of man, such for instance as the National Canners Association, resembles in many ways a living thing. It has a definite body or structure by means of which it accomplishes certain purposes or functions. It has considerable powers of adaptation to meet changing external conditions. It is capable of growth. It may be healthy and strong or weak and sickly. It can also die. When we say some activity or undertaking is organized, we mean that the different parts of its body are different from one another because they have different things to do. Just as we have feet to walk with, eyes to see with, ears to hear with, the Association has one department to deal with the problems of our raw products, a research laboratory to solve the problems we meet with in our processing, a home economics division the function of which is to help maintain order and relation between our products and those who will use them, legal counsel to coordinate the Association's activities with the activities of other organized undertakings of men according to accepted legal principles, an information division which keeps the membership informed as to all of these other undertakings.

HENRY P. TAYLOR
1950 President

But when we say that an activity is organized we do not mean simply that its work is divided between different parts which are separate and distinct from one another, we mean also that these different parts are definitely related to one another as well. Just as the health of a living organism depends largely on maintaining a proper balance between its different parts and a proper coordination between their functions, so that a unity of purpose is achieved in spite of a diversity of effort, so the health of any organized human activity will depend on proceeding in exactly the same manner. It is impossible in the present state of man's imperfect understanding of how to go about doing this and his failure to realize that the good of each of us is so intimately bound up in the good of all of us that none of us should dare seek his personal advantage at the expense of the common good—it is impossible now that organized human effort can approach the perfection of a living organism, but we can at least make that our goal.

One of the most important relationships in this association is the relationship between its members and the Association itself. One of the most important things to remember is that this relationship is a purely voluntary one and that nothing will destroy it more quickly than for a part of the membership to attempt to coerce the rest of the membership into doing something it is either not willing or not ready to do. This Association has been peculiarly fortunate in the fact that the man who more than any one person is responsible for its outstanding sucess, Mr. Frank Gorrell, has been most keenly aware of this fundamental consideration. May we all carry on successfully the methods he so soundly initiated.

MR. TAYLOR is president, Taylor & Caldwell, Inc., Walkerton, Va., farming and canning. He has been an N.C.A. member since entering canning in 1913. Served two terms as Director; member, various Association committees; vice president in 1949.

Entered canning with Stansbury Canning Co., Walkerton; became manager, 1916. Resigned, 1917, to enter armed services. Went overseas with 29th Engineers; 2nd lieutenant in France in World War I.

Mr. Taylor leased a cannery in Walkerton in 1921; later bought it. C. C. Caldwell of Walkerton entered the business in 1925, and the firm became known as Taylor and Caldwell, incorporated as partnership in 1930.

Born, 1891, in Richmond, Va., he was educated at McGuire's School there, and University of Virginia. Studied, University of Grenoble and Paris, France. A.B. and M.A. degrees at University of Virginia. Elected to Phi Beta Kappa.

Convention Proceedings

(Continued from page 19)

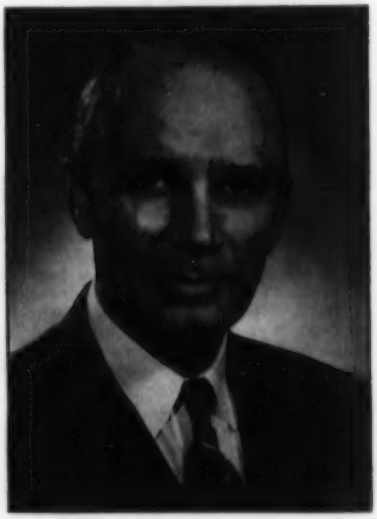
National Canners Association, National Food Brokers Association, and Canning Machinery & Supplies Association—expressed themselves as well satisfied with the Convention arrangements and results. The Atlantic City Convention Bureau estimates an overall attendance of 15,000, based on registrations made at the various information centers of the Convention, and considers this a conservative figure since their experience has shown that many in attendance do not register.

The departmentalization of the Convention into two periods stressing sales and production matters, respectively, seemed to find favor in that it enabled all segments to make the contacts essential to successful conduct of Convention business.

Sales and Production

The first group to arrive were the food brokers and their non-canner principals, closely followed by sales forces of canners and some of the buyer organizations. N.F.B.A. held a successful business meeting on Monday, January 23, and packed the Ballroom of Convention Hall with a huge banquet and entertainment the following night. Tuesday, Wednesday, Thursday and Friday were heavily booked with appointments between canners, brokers and buyers.

CARLOS CAMPBELL
Secretary



The production period centered on the tremendous exhibit staged by C.M.&S.A. which was in full sway Friday, January 27, and for four days altogether. More than 8,000 registered for the exhibit, which, occupying approximately 100,000 square feet, was five percent over last year's figure, although again there were 130 exhibitors. C.M.&S.A. held its annual business meeting Sunday morning. Important phases of the production period were the technical conferences held by N.C.A. for laboratory and raw products technologists, on Saturday, Sunday and Monday (reported elsewhere in this issue) and the Saturday afternoon session of the N.C.A. Fishery Products group.

The formal program and business sessions of the N.C.A. took place on Saturday morning and Sunday afternoon. In the absence of President John F. McGovern, whose convalescence from a recent illness prevented his coming to Atlantic City, Vice President Henry P. Taylor presided with assistance of Past President Howard T. Cumming. Mr. McGovern's address opening the Convention was delivered by sound film made a few days previously in the McGovern living room at Le Sueur, Minn., and shown to the Convention delegates from the stage of Convention Hall.

Taylor and Barnes Elections Popular

Mr. Taylor was elected as 1950 President at the opening general session, and his selection to head the ticket brought in by Walter L. Graefe, acting for the chairman of the Nominating Committee, along with that of Herbert J. Barnes, of Kaysville, Utah, to be vice president, was universally acclaimed in the Convention Hall.

At the installation of officers Mr. Cumming paid his respects to both the outgoing and incoming N.C.A. presidents in the following language:

"We now come to that inevitable point in our program where we are of necessity subjected to a certain strain. It isn't easy to say farewell to one friend even though we may be hailing the approach of another.

"No one would want to let this final general session of our Convention come to a close without again thinking of 'Johnnie' McGovern. Let's imagine that 'Johnnie' at this very minute is thinking of us as we are thinking of him. And let's picture him as being in a mood so responsive that he can feel the warmth of our sincerity as we thank him for a job well done and express the hope that he may quickly regain his health. Thank you, 'Johnnie' McGovern!

"Late yesterday I stopped in Mr. Gorrell's room and there I found Henry Taylor getting the background of some important subject. How many of his predecessors have had that experience! And I smiled as I heard the old familiar question come from Frank, 'Henry, what day did you say you would be in Washington next week?' Until that moment it probably hadn't occurred to Henry that he would be in Washington next week. But he will be.

"But, Henry, with all the time it will take and with all the problems that will develop, it is possible to get pleasure out of every minute of it.

"And, do you know, I think N.C.A. is getting a little extra dividend in this deal. While Henry is perfectly capable of swinging the new assignment alone, it isn't going to hurt to have Mrs. Henry so near Washington too! So greetings to both of you!

"And so, Henry, here is the symbol of office. *(Presents the gavel).* May you use it with discretion and decision.

"I invite you to take over as President of the National Canners Association."

Statement of President Elect

At his election to the presidency, Mr. Taylor said:

"Howard, members of the National Canners Association. I can truthfully say that outside of my family the friendships I have made in the canning industry mean more to me than anything that has come into my life. I find it entirely impossible to say to these friends who have conferred on me this honor the things I would like to say. But there is a paraphrase of an old proverb which says, 'What you do speaks so loud I cannot hear what you say.' It is my hope that what I do will convey to you the profound appreciation I feel but cannot express for the honor you have done me."

Association Business

The Association was presented with a valuable library which will be in-

(Please turn to page 95)

FRANK E. GORRELL
Treasurer

HERBERT J. BARNES
1950 Vice President

MR. BARNES is vice president of the Kaysville Canning Corp., Kaysville, Utah, with which he has been associated since boyhood.

Employed by the Kaysville Canning Corp. when it was organized in 1902, and has held number of positions with that company. Also active in affairs of National Canners Association on its Board of Directors, 1930-32 and 1941-43, and on these committees:

Raw Products Committee, 1937-43, '44; chairman, 1945 and 1946, member of Committee 1947; Administrative Council, 1942; War Council, 1942; Planning Committee, 1945-46; Resolutions Committee, 1945-46, Research Advisory Council, 1946-48; Home Economics Committee, 1947-49; Research Advisory Committee, 1949; Western Branch Laboratory Advisory Committee, 1947-49; Western Laboratory Building Committee, 1947.

Has other activities in Kaysville as bank president, 1949 president Utah Manufacturers Association, and promoter important irrigation project.

General Sessions

GREETINGS TO THE 1950 CONVENTION DELEGATES

By John F. McGovern, President National Canners Association

You canners who have always contended that you are deserving of special consideration if not pity, subject as you are to the whims of wind and weather, drought and floods, blistering heat and freezing blasts—too much citrus—too much corn—brace yourselves against this latest visitation, a canned speech.

And here's how it came to pass!

As the time for the Annual Convention approached and my convalescence offered little promise of my getting there, I chided the doctors for not pushing me along the recovery route a little faster. I even threatened to have the N.C.A. go on record for socialized medicine.

They merely replied, "You'll have to be patient and let nature take its course."

But nature showed very little interest!

So while nature was taking its course I have been spending my time the last month walking, cane in hand, from the living room round the dining room table and back to the living room.

That trip has lost its allure after a month or so of hiking.

Thus, I felt the need of a lift. I concluded the best way to get it was to get away from nature and get to Atlantic City for a day or two with you folks.

There was much to be said for that decision.

In addition to the stimulus to be gained from this happy association there was another factor! You know misery loves company! This being so, it was practically certain that I would gravitate into the company of a lot of corn canners.

I knew that in this mournful company I would see many forlorn figures more miserable than myself. Thus this doleful rubbing of elbows with real honest-to-god dejection should buck me up and stop a growing tendency to pity myself and to chafe at my slow recovery.

Then there was another strong urge to get to the Convention aside from that and my natural desire to make one more appearance and one more speech. That consideration involved my understudy, Henry Taylor.

You may or may not know that the first month or so of a newly-elected President's activities is devoted to tutoring the Vice President.

That chore includes a short course in public speaking; whipping him up to a determination not to be a mere rubber stamp for the Washington office; and generally to stimulate in him a desire to display as little awkwardness as possible in the social graces, including such novel experiences as wearing a dinner coat, posing for pictures and accepting free meals graciously.

I had my apprenticeship under Howard Cumming who, as you know, achieved unusual success with his pupil. But that rebel, Henry, was a bit difficult at first and kept making sarcastic allusions to the outcome of the First Battle of Bull Run. However, I was patient with the boy; just sat quietly humming "Dixie," Suwannee River" and "Carry Me Back to Ole Virginnie." Under that treatment, Henry softened up like a ripe tomato in the warm Virginia sunshine.

After that he progressed rapidly and took over many of my assignments with great credit to himself and his tutor.

This present opportunity for Henry to have greatness thrust upon him came about in this fashion. The doctors first promised I might attend the Convention if I thought I could stand the trip and kept out of action and away from crowds. My wife who loves conventions and particularly

"Au Revoir But Not Good Bye!"

Action strip from sound movie of Mr. McGovern delivering his address to Convention.

this one convinced me and the doctors I could easily do all those things.

Then conscience "which makes cowards of us all" took possession of our home-town doctor. He reversed himself with an agility worthy of our supreme court. He painted a picture of what could and might happen to me. He avowed the trip to the Convention was fraught with more evil consequences than could come from keeping our bananas in the refrigerator.

I could go to the Convention, he said, but he thought I should know I might never come back.

That convinced even the little woman I ought to stay at home.

I had hoped to make this final appearance even though I looked like Oliver Wendell Holmes' "Last Leaf." You remember how he described the Old Fellow—

"The paving stones resound
As he totters o'er the ground
With his cane!"

"They say that in his prime
Ere the pruning knife of time
Cut him down,
Not a better man was found
By the crier on his round
Thru the town."

"But now his nose is thin
And it rests upon his chin
Like a staff.

And a crook is in his back
And the melancholy crack
In his laugh."

That description fits my case to a "T." So, brothers, despite this overwhelming loss occasioned by my absence, buck up and be of good cheer! Continue to cling to that inexplicable and abiding optimism which characterizes the canner and lures him into believing that things can't be this bad always and hoping next year will be better.

Also, sometime during the session or more appropriately at the close of a session—at the cocktail hour perhaps—give a passing thought to an unfortunate, lonely, out-going President held by the fell clutch of circumstance out here in wintry Minnesota to grieve by himself not to be with you.

So, au revoir, but not good bye.

MRS. AMERICA IS THE MONOPOLIST IN THE FOOD BUSINESS

By Franklin J. Lunding
President, Jewel Tea Co., Inc., Chicago

You gentlemen do not need to be told that monopoly in distribution is on the front page these days. But there seems to be some misunderstanding about who the chief monopolist is. The real monopolistic power in the food business is in the hands of Mrs. America, homemaker and shopper. No one is big enough or strong enough to compete with her, or to argue with her. She can make or break a product or a brand. She can make or break a retail store or a chain of stores. She can make or break an entire system of distribution. She is the boss monopolist of them all. She is a benevolent monopolist—as long as she is well served—but her benevolence has to be earned afresh every day.

Why shouldn't it be? Every dollar spent in the retail food business—the country's No. 1 consumer industry—comes out of her pocketbook. She supports the farmers and fishermen and cattle raisers, the pickers and processors, the canners and packers and manufacturers, the brokers and wholesalers and jobbers, the agencies of transportation—the whole complex system of food production and distribution, from the land all the way down through to her neighborhood food store and onto her kitchen table.

In our business we have stopped thinking of this powerful woman as "the consumer." We personalize her as Mrs. Brown, a homemaker who faces the daily problem of feeding a family on a budget that seems never to be quite adequate to cover all the bills. She is our boss. We get along with her very well—as long as we concentrate on her problems and keep our own in the background. But whenever we slip just the least little bit, by thinking of our worries and our pocketbook instead of hers, she promptly puts us in our place!

I repeat, why shouldn't she? She has a monopolistic control of her family's needs and likes, and she has a right to exercise it. This she does every shopping day in the year.

So I ask you gentlemen to realize that the real buyer you are so concerned to reach, as you face the problem of disposing of your packs, is not the man who sits at the desk and promises—or declines—to stock your merchandise. He is only the purchasing representative of the monopolistic Mrs. Brown. His store shelves are her pantry. If he wants to keep his job he can safely buy for these shelves only items that she can afford, and which she enjoys and uses regularly. Otherwise she will look up a new pantry. He is purchasing agent for the No. 1 monopolist of the food business, not a dispenser of favors in the form of orders to hopeful canners', packers' or manufacturers' salesmen.

This is what it means to be a retail merchant today. But even this tells only part of the story. Recently I ran across a specification for a merchant which was written a generation ago, yet it is as modern as 1950. Let me read it:

"When I am able to sell *more* merchandise of the same kind, of the same quality, at the same price as my competitor, and while doing so *increase the good will of my customers*, then and only then I will consider myself a merchant."

I ask you to notice that the three key factors in this specification are price, quality and good will. Price is partly a matter of skill in buying; it is even more a matter of efficient operation. Quality is something the canner or producer must provide—at the right cost. That is largely your responsibility.

Good will is the hardest part of the specification. No merchant can buy it; he has to earn it. And when he does, he earns it not merely for himself but also for you gentlemen as producers. In this sense the retail merchant works for you as well as for Mrs. Brown.

She demands value and quality, and expects efficiency; but beyond these, she insists on shopping where she feels that her special problems in feeding her family are understood, and where every effort is being exerted to make shopping a pleasant experience for her—quick, easy, enjoyable, and free from risks or disappointments.

So the modern retail food merchant must be not only an economist and a technician in distribution but a psychologist as well. He must look upon his store, not as a place filled with shelves and merchandise and gliders and check-out desks and cash registers, but as a unit in a complex and highly competitive system of food distribution. He must skillfully engineer the layout of his store for traffic, to make shopping easy for Mrs. Brown. He must use advertising and promotion ideas, and plan special displays, to keep his shelves "hot"; for so small is his profit on each individual transaction that he must get 18 or 20 turns a year on the merchandise he offers in order to earn a profit on his investment.

This means that he must measure the yield, in both sales and gross profit, of every linear foot of shelf space and every square foot of warehouse space. He must balance the yield, in both sales and gross profit, of every item he carries, in relation to what the space it takes might produce if devoted to some other item. In a sense he is in competition with himself. He sells canned fruits and vegetables, frozen fruits and vegetables, and fresh fruits and vegetables because Mrs. Brown, monopolist, insists on being able to choose from all three. And she is in her toughest shopping mood when she is deciding between them. That is when quality

and price really count! That is where the merchant's skill as a practical food economist comes in.

As for his skill as a psychologist, let me refer back to the specification of a merchant: he must "increase the good will" of his customers. This takes him into the realm of emotion.

In our business one of our major concerns has always been this question: 'How does Mrs. Brown feel about Jewel?" We made up our minds, early in our history as storekeepers, to find out just what the Mrs. Browns we were trying to attract to our stores wanted their food store to be like. To do this we sent young women out to call on them. In the year 1934 they visited 18,000 Chicago women in their homes and asked them what they liked or didn't like about their neighborhood Jewel store, and—more importantly—just what they looked for in a food store. The storekeeping gospel we live by every day grew out of these 18,000 calls. Over the past 15 years we have found this gospel more important than our shelving, our displays, our refrigeration, our check-out desks, our back-room equipment, our warehouses, or our merchandise. For it is the spirit of the business that is the elusive something that helps to draw hundreds of thousands of Chicago homemakers into Jewel Food Stores every week.

Last Thanksgiving Day we ran an advertisement with the heading:

Our Thanks
Go to You Today—
Mrs. Homemaker

You have been a full partner in making Jewel a Better Place to trade and a better place to work.

This advertisement was endorsed and signed by all Jewel employees before we released it for publication. Under the subheading "You have made Jewel a better place to trade by accepting our efforts" appeared the following:

"1. To make food shopping at Jewel a pleasant activity—to have you feel you are among friends.

"2. To discover and introduce more efficient work methods in new and old stores, and to *share resulting savings with you in the form of lower prices, increased values and improved service.*

"3. To keep our stores Kitchen Clean in the interest of sanitation and as a symbol of our respect for you.

"4. To offer only fresh, fine quality foods, attractively displayed with suggestions for preparation, *thereby helping you* keep the admiration of your family for being a good shopper, a good cook and a good manager.

"5. To recognize the particular importance of meat in your meal planning and give you extra value through proper trimming and cutting, and consistent top quality.

6. To protect your interests and intelligently represent your needs and wants in the many and varied food markets from which we obtain food for you."

It is this spirit that has been largely responsible for our steadily climbing sales. And that is where you gentlemen of the canning industry come in. As merchants, we must be able to offer you not only space on our shelves, but a share in the spirit and confidence of our customers. Of the two, the latter is the more valuable to you, as it is to us. To the extent that we succeed in creating the right feeling on the part of Mrs. Brown, we succeed for you as well as for ourselves.

One of our chief worries is that something we sell to Mrs. Brown will disappoint her in quality or value and destroy—perhaps permanently—the spirit of confidence and loyalty we have worked so hard to earn—for ourselves and for you. The men on our buying desks are never permitted to forget for a single hour that they are purchasing agents for Mrs. Brown, not for Jewel. As such, in the buying of your merchandise they have the responsibility of seeing to it that she gets her full money's worth, in quality and competitive value; and that she will not be disappointed in the merchandise when she comes to use her purchase.

Let me tell you what our buyers look for in canned foods and other merchandise as purchasing agents for Mrs. Brown, and how we judge every item submitted to us. If it is a new item, we ask these four questions:

"1. Will it give Mrs. Brown and her family a new taste thrill?

"2. Will it be worth the price we must ask for it?

"3. Is it likely to continue to appeal, and therefore repeat?

"4. Does it promise to turn over fast enough to pay for its shelf space?"

If it is similar to an item we already carry, we ask these questions:

"1. Will it *enlarge* the market?

"2. Will it *replace* a competitive item, or merely add another item to our shelves, without enlarging the market or replacing a less salable or less profitable item?

"3. In the face of present competition, will it turn over fast enough to pay for its shelf space?"

Whether it is a new item, or duplicates one or more that we already stock, if it passes these tests our buyers then consider these further factors:

"1. Of its kind or grade, will the quality meet Mrs. Brown's taste standards and be enjoyed by her family?

"2. Can it be sold profitably in satisfactory volume at a price we believe Mrs. Brown will be willing to pay for it?

"3. What is its long-range sales potential?

"4. Is the firm behind it soundly managed and financially responsible?

"5. Will the producer support the product with advertising and promotion, or leave on us the whole responsibility for building sales volume?"

I am sure that you will agree that these are reasonable questions. We are spending a great deal of money and an enormous amount of thought and effort to win Mrs. Brown's friendship and confidence, and we can't risk disappointing her or shortchanging her with anything she buys at Jewel. That is why we are so concerned with what is behind the label on your merchandise.

As you gentlemen well know, the value of a brand is not the pretty lithographed label on the package but the mental association that flashes in Mrs. Brown's mind when she sees that label. If she hasn't tried the brand before, there is no association and she is Mrs. Monopolist from Missouri. On the other hand, if her experience with that product or brand has been favorable, her mind says, "Oh, yes," and her hand reaches for the package on the shelf and she takes it down and puts it into her glider—unless she is stopped by the price card under it.

That is the picture of the buyer I would like to fix in the minds of you gentlemen. Not the face of Earl Miller or Scotty Wilson across the buying desk in our offices, but the face of Mrs. Brown standing in a Jewel store—or any retail food store, her hand poised as she locates the item she is seeking—a can of your merchandise.

And then I ask you to watch her face as she notes the price. Will she reach for the can, or will she glance toward the frozen food case or the produce rack—and give her glider a shove toward one or the other, leaving your merchandise on the shelf?

It is true that Mrs. Brown has a strong loyalty to canned fruits and vegetables, but whether it is strong enough depends on price relationships. For she also has a preference for fresh fruits and vegetables, and a growing loyalty to frozen fruits and vegetables. She has brand loyalties, too; but they are also influenced by price relationships.

But price alone won't make her reach for any particular product or brand as she scans the shelves. Every once in a while a supplier comes to us with a price story on an excellent—but unknown—product. He is disgruntled if we do not share his enthusiasm for its sales possibilities. We wish we could. We like good products that we can sell at attractive prices. But neither the packer's enthusiasm nor ours will make Mrs. Brown take the product off the shelf and put it in her glider—unless she

shares that enthusiasm. Somebody has to spend money to bring Mrs. Brown's enthusiasm to the buying point. That is why we are strong for the well-advertised brands, the quality of which is jealously maintained—provided they are priced competitively.

And that brings up the matter of private-label canned goods. Speaking for Jewel Food Stores, we are not anxious to build a private-brand business for reasons of pride or for the purpose of tying customers to our stores. To the extent that we have developed our own brands, our purpose has been to assure getting good quality within what we consider to be a retail price range that will have a strong appeal to Mrs. Brown, and to give her a broad selection of both grade and price. We apply to our own private label merchandise the same tests as to turnover and volume as we use in judging all the merchandise we offer in our stores. Frankly, we would rather concentrate our time and energy on the problems of laying out our stores to serve Mrs. Brown efficiently, creating a spirit that will draw her and her neighbors to Jewel, and making every shopping experience a pleasant and satisfactory one. That is our No. 1 job and as I remarked before, it is important to you. It makes advertising effective at the point of sale for you, as it does for us.

This brings up the importance of other merchandising factors. Do not overlook the fact that oftentimes sales opportunities lie in the realm of emotion—the feeling of confidence and pleasurable anticipation—rather than in the area of shopping economics. I am becoming increasingly convinced that how Mrs. Brown feels is a more important factor in merchandising than any of us have realized. It isn't enough to be right; Mrs. Brown must believe we are sincere in all our efforts to serve and please her.

Incidentally, there is a bit of emotion in our buying too, which I'd like to mention in passing. Most canned items are packed in dozens. We get emotional when you gentlemen make price reductions of 10 cents and 20 cents per dozen and expect us to reduce the price to Mrs. Brown by 12 cents or 24 cents per dozen.

Also, we experience emotion when we study our operating figures and are reminded that it costs us approximately the same amount to handle a case of merchandise, whether the merchandise in it sells for 10 cents or 15 cents or 25 cents per unit. Our expenses are not elastic, and we have to cover them in dollars, not in percentages. That is why we have to watch our gross margin in cents per unit and not be misled by percentage figures.

When we consider our operating costs we must not forget that Mrs. Brown also has an operating budget to struggle with. When she goes shopping for food for her family, it isn't only a problem of balancing the cost of canned or fresh or frozen foods that concerns her; it is the fact that she has to look to savings from her grocery budget to pay for a new Easter bonnet, for an occasional permanent or facial or manicure, or for movie tickets for her youngsters. That is one of the satisfactions of our job as purchasing agent for Mrs. Brown—our careful buying and our operating efficiency can be translated into things she might not otherwise be able to buy for herself and her children.

We business men must constantly keep in mind that the pressure on the modern family's income is terrific. In

FRANKLIN J. LUNDING

competition with the food budget is the need for a new car, or the family's yearning for a television set, to say nothing of the demands for clothing, home furnishings and the like. The battle for the Brown family's dollar never lets up, day or night. In this battle we are enlisted on Mrs. Brown's side. We invite you to join us. The more all of us help her, the more we will help ourselves.

Be assured that if we do not buy from you when you offer us your merchandise, it isn't because we don't like you, but because in our judgment you have not managed to gear your business closely enough to Mrs. Brown and her needs. Your thinking and planning may have stopped at our buyer's desk—which is only the halfway point in modern distribution.

Merchandising is no longer merely a matter of deals made across the buyer's desk. Today's merchandising is spelled D-i-s-t-r-i-b-u-t-i-o-n—and it begins with a capital "D". A successful food merchant today is not only a good buyer and operator, but also an economist and psychologist.

Food distribution is not yet a science, but it is surely moving in that direction. The Neilson surveys tell the manufacturer who subscribes for them what Mrs. Brown is buying, and what she is leaving on the grocery store shelves. There is no guesswork about it; it is based on actual shelf count.

In the Chicago area, *The Chicago Tribune* carries the same idea down to the consumer level in the form of a continuous pantry shelf survey in the homes of a cross-section of Mrs. Browns.

It remains to interpret these statistics, to establish just why Mrs. Brown buys this product and not that one. But now that we realize that the decision often involves emotion as well as economics, we are going to make faster progress in this field, too.

I believe we are in the throes of revising the whole process of food distribution—streamlining it for greater efficiency, in characteristic American fashion tackling it first in cut-and-try fashion, and then striving to shape it into something of a science.

More and more the retail merchant is going to move merchandise in a straight-line flow to Mrs. Brown's kitchen, eliminating much waste and many expenses.

He is going to buy in large quantities, either on his own account or in association with others, after scientific inspection as to quality and critical consideration of value and customer appeal.

He is going to use more labor-saving equipment, and use it to an ever-increasing extent, to handle the merchandise he sells.

He is going to make steady progress in the field of refrigeration for perishable products, preserving their freshness longer and reducing spoilage.

He is going to employ scientific laboratory controls to maintain—and improve—the quality of the products he offers. Here the cooperation of you gentlemen of the canning industry can be of great value to him; to the extent that you take over this responsibility, so far as your products are concerned, it will relieve him of the responsibility and expense.

All of these factors—all of this striving toward a science of distribution—boil down to this, as I see it:

Working together, we must reduce costs all along the line so that there will be a free flow of merchandise from you as producers to Mrs. Brown's kitchen table, at the lowest possible cost for handling.

If we do this, Mrs. Brown's monopoly in the field of food distribution need have no terrors for any of us!

BUSINESS AND THE CONSUMER

By the Honorable Charles Sawyer, Secretary of Commerce

A few months after I was appointed Secretary of Commerce, at a press conference in August of 1948 devoted to a discussion of export controls, I made the remark that it might not be a bad time "to give some attention to the interests of the housewife." This remark seemed to arouse interest and comment, as if I had said something unusual or perhaps unorthodox.

My remark, far from being unorthodox, was based on one of the oldest axioms of economics. In the year 1776, Adam Smith stated this axiom in his book, *The Wealth of Nations*. He said, "Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to only so far as it might be necessary for promoting that of the consumer. The maxim is so perfectly self-evident, that it would be absurd to attempt to prove it." Adam Smith saw in the economic system of his day a tendency to emphasize the interest of the producer. In our own time we too have become preoccupied with our miraculous feats of production.

When we talk about our accomplishments as the world's most powerful economy, when we talk about our goals for the future, we must refer not only to production; we must keep in mind the daily satisfactions we are providing for the consumer. Upon that basis—as businessmen, as laborers, as farmers, and as government officials—we must formulate our policies and our rules of practice.

Each one's point of view is colored and occasionally distorted by his particular calling. We think of ourselves as belonging to various groups—producers, distributors, government officials, farmers, working men, or housewives—and so we do. All of us, however, are consumers. That is the common ground upon which we meet.

We have made progress because we have learned how to produce more of the things we need more efficiently. When our economy is functioning at its best, prices tend to decline and consumption expands. This healthy trend has taken place in several rather long periods during the last hundred years. One such period was the 40 years preceding the Civil War; another the 30 years following the Civil War; and another the middle twenties. In the development of many of our strongest industries we have seen the same trend in all periods of our history. Time after time, producers have created new and greater markets by lowering their prices. By expanding their markets, they have placed themselves in a position to introduce the cost-reducing efficiencies of mass production and mass distribution. With productivity per worker increasing, wages have risen; and with a greatly expanding market, profits have gone up. This is not the universal pattern; but we might almost call it the normal way of doing business in America.

Contrary to some predictions, our production and employment advanced steadily following World War II. Our own markets and markets all over the world were hungry for the things we could furnish. With great masses of purchasing power available to buy these goods the demand greatly exceeded even the fabulous quantities of goods we put out. The result was serious shortages and steadily rising prices. A part of the effort to combat these difficulties was the use of export control by the Department of Commerce, with which I was dealing when I made the remark about the housewife. As prices mounted, wages mounted. The familiar upward spiral was in operation. In the summer of 1948 many of us were concerned about inflation. We wondered when the upward spiral would stop; we hoped that when it did stop it would not start back downward too rapidly.

In September, 1948, the cost of living index stood at 174.6. This meant trouble for the consumer. It meant serious trouble for those of our people who were living on fixed incomes—for those deriving their incomes from pensions and insurance, for those professional and white-collar workers who were not organized to demand wage increases to cover the increased prices they had to pay.

Then—in the early months of 1949, something happened. An important group of consumers went on a strike! Demand for goods fell, employment fell, production fell. The particular group of consumers which was holding back was the group of men who maintain business inventories. They had become scared, and cut their buying drastically. Within a period of six months the rate of inventory accumulation declined by the staggering amount of $12,000,000,000. Fundamental conditions, however, were sound; business buyers regained confidence, and the decline leveled off with a satisfactory adjustment to more normal economic conditions.

Consumers' purchasing power had not been materially affected. Actually, in 1949 the disposable personal income—that is, the income of all individual consumers after the deduction of taxes—was higher than the previous record high figure of 1948, which was $191,000,000,000. Moreover, in 1949 consumers were able to buy a greater quantity of goods and services than in 1948 or any other year in our history; and they could buy these goods and services at somewhat reduced prices. Many new and improved products were placed on the market for the first time. There was a far greater assortment of styles and qualities than ever before. The increased availability of housing facilities and automobiles illustrates this trend. If we apply the criterion of consumer satisfaction, we can say that 1949 was probably the best year in the history of the American economy.

We cannot afford, however, to rest in smug satisfaction. Some people say that our present prosperity is false, that it is based on more but cheaper dollars. We hear that the people are no better off now than they were 30 years ago, despite the fact that our national income is three times as high.

Let us look at the facts; let us find out what has happened to us as consumers of the goods and services we produce. In this brief survey of the facts I shall talk *not* about dollars, but about *things* and *actual services*.

From 1919 to 1949, the per capita consumption of goods and services in the United States increased by almost 60 percent. This increase has not been steady. In 1939, for instance, the consumption per capita was only slightly above that of 1929. Between 1939 and 1949 consumption per capita rose spectacularly—by nearly 40 percent.

These are general statistics which average out all goods and services. When we break them down into specific things such as automobiles, refrigerators, radios, and so on, we find that the gains are much more spectacular. For instance, in 1919 there were less than 7,000,000 passenger cars registered in the United States. In 1949 there were over 35,000,000 registrations, and the average car owner in 1949 used twice as much gasoline as the car owner of 1919. Nor should we fail to take into account the immeasurable superiority in quality, performance, comfort, and appearance of our modern cars as compared with those of the early twenties.

In 1919 there were less than half a million electric washing machines in American homes. By 1949 the number had increased to over 25,000,000. Similar increases have taken place with regard to other types of labor-saving equipment in the home, such as vacuum cleaners, electric irons, and electric refrigerators. In the twenties electric refrigerators could be purchased only by the well-to-do. Today there are nearly 30,000,000 in use.

Perhaps the most spectacular increase of all is in the number of radios. From the relatively few crystal sets in use in the early twenties, the number of radios in American homes has increased rapidly, until last year there were 62,000,000 in our 42,000,000 households. On the average, each household had one radio, and half of them had two. Today we are seeing a similar expansion in the use of television sets. In 1947 there were only 200,000 television sets in Amer-

ican homes. Today there are over 3,000,000.

We have made steady progress in equipping the American home with the conveniences of modern living. Even in the seven years between 1940 and 1947, which included five years of war, the number of dwelling units without electric lighting was cut from 8,000,000 to 4,500,000. The number without inside running water was reduced from over 11,000,000 to 7,000,000. Home owners used three times as much electricity in 1949 as in 1939, and since 1939 the number of residential telephones in use has doubled.

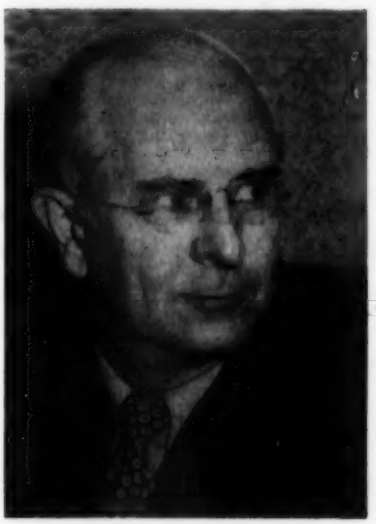
The gains I have just mentioned are consumer gains in the possession of durable goods. Similar gains have been made in the consumption of non-durable goods, which include such basic necessities of life as food and clothing. It is generally assumed that the demand for food does not change from year to year. The fact is that in the last 30 years the per capita quantity of food consumed has increased 10 percent.

The American standard of living includes, however, more than the durable and non-durable goods we buy and use. It includes a wide variety of service. In the field of services we have progressed less rapidly than in the field of commodities. Even so, the average person today obtains 40 percent more services than the average person of 1919.

One of the advances in services during the past 30 years has been the use of the hospital as the customary place to care for the sick. As late as 1927 there were only seven hospital beds per thousand people. In 1948, with a much larger population, there were 10 hospital beds per thousand. We have added over half a million hospital beds since 1927. On the other hand, the number of physicians and dentists for every thousand people has not increased since 1919. Our gains have been made in the improvement of techniques, rather than in the amount of professional care.

Another kind of service that has been greatly expanded is recreation. The motion picture is a striking example of the gains that can be made through mass production and mass distribution in the service field. The great expansion of the motion picture industry took place in the twenties. Similar expansions have taken place more recently in other types of entertainment, the most impressive of which are in the field of professional sports.

I would like to describe what has happened in your own industry over the past decade. At the end of 1949 the housewife paid, on the average, $1.97 for the same quantity of food that cost her $1.00 in the years just before the war. In other words, the average price to the consumer of all food products had increased approximately 100 percent. According to the latest Industry Report on Canned Fruits and Vegetables published by the Department of Commerce, the prices of canned fruits and vegetables increased by only 45 percent during the same period. The housewife now pays $1.45 for the canned fruits and vegetables that cost her $1.00 before the war. Let us look at these facts in another way. In November of 1949, the average hourly earnings of production workers in all manufacturing industries were $1.39. In 1938 the average hourly earnings of the same group of workers were $0.63. Suppose that in 1938 a can of vegetables cost $0.12. One hour's labor would buy five cans of vegetables. Today, even with the price of the same can of vegetables having increased to over $0.17, one hour's labor will now buy eight cans.



SECRETARY CHARLES SAWYER

This kind of progress means something to the consumer. The relative stability in the price of canned fruits and vegetables, together with increased income for the consumer, has brought a marked increase in the demand for canned foods. In 1939, the total pack was 265,000,000 cases. In 1949, it was 461,000,000 cases. It is also proper to note that in the same period the wages of workers in your industry have risen from $0.43 to $1.14. This is a striking illustration of the way stable prices can bring wider markets to business and higher wages to workers. The result was achieved through competition and increased efficiency. The manhours required to produce a case of canned foods have gone down as a result of more efficient techniques. During the past decade the technology of electrolytic tin plating, for instance, has benefited the whole canning industry.

The achievements of the can manufacturing industry during the past decade are worthy of special comment. In 1949 the output of this industry equaled or exceeded the record 3,250,000 tons of steel used in 1948. This production level is about 50 percent above that of a decade ago. In spite of a 50 percent rise in cost of materials and a 125 percent rise in labor costs, the prices of cans in 1949 were up less than one-third over the prices of 10 years ago.

I mention these facts about the canning industry to illustrate the way in which balanced progress is achieved in the American economy. I could illustrate the same point by reference to other industries and other products. What I have described is a pattern of progress. If this pattern can be followed generally, the welfare of the American people as consumers will be served. At the same time, the businessman, the worker, and the farmer will benefit as the economy grows in response to greater efficiency, stable or decreasing prices, and wider markets.

The facts I have outlined are impressive. Others could be supplied to answer those who say that our economy is richer in dollars but no richer in the things and services which people can use. There is, however, sufficient point to this remark to give us pause. Money is meaningless except as it can be used. Its value is purely relative. The question is not how many dollars you get, but what can you get for the dollars you have?

When we talk about wages we must think in terms of real wages—that is, the actual buying power of the paycheck. In this connection it is interesting to note that during the past 40 years the real wages of factory earners have more than doubled. This gain was made because our economy has become more efficient. At the same time that our working people have made gains in the size of their real wages, they have also made gains in the number of hours of leisure in which they enjoy life. In 1909, the average work-week of factory workers was 57 hours, as compared to 40 hours in 1949. This is a reduction of 30 percent. We cannot attach a price to leisure. It means more enjoyment of life. It means increased efficiency during the working hours, and it means new opportunities for those businessmen who provide entertainment and recreation for the American people.

It is interesting also that some classes of workers who once earned very low real wages have made the greatest gains during recent years. For instance, the real wages of unskilled railroad section laborers have increased by 66 percent since 1937, as compared with an increase of 10 percent in the real earnings of skilled railroad shop machinists. In the same period, the real wages of helpers and laborers in the building trades rose 35 percent, as compared with a 10 per-

cent increase in the wages of skilled journeymen. The real wages of workers in the cotton textile industry rose by 63 percent during these years, and the real wages of workers in the cottonseed oil industry rose by 109 percent.

To direct the discussion again to the real value of money—it is clearly of no benefit to the working man to get a 50 percent increase in wages and be forced to pay 50 percent more for everything he buys or uses. The same comment applies to the farmer—and yet neither the working man nor the farmer is content to see prices go up and his income remain static. Needless to say, the same reasoning applies to the businessman. Each group watching its own welfare has felt itself engaged in a race to keep up with or pass the other fellow. This race, like others, can't go on forever. The speed can be increased for a time, but there is bound to be an end—exhaustion, or even collapse.

How can this be avoided?

This brings us back to an earlier remark—as consumers we are all on common ground. We have explored many times the interests and influences which divide us; we should explore more often and thoroughly those which unite us.

Our strength as a nation derives not from one but from many sources—from our democratic institutions, our business system of competitive free enterprise, our self-respecting force of workers, our hard-working and progressive farmers, our scientists, our educators, and our natural resources.

The groups which participate in keeping America strong are as closely interdependent as the various parts of a healthy organism. Our concern must be to keep these groups in balance so that, by working together, they can produce a better way of life for all of our people.

Such balance is not easy to achieve. In a real world, inhabited by fallible human beings, we do not expect paradise. We can, however, reasonably look forward to improvement, because we have seen real improvement in the past. Human affairs are influenced deeply by ideas and philosophies. Our chances of achieving a better balance and a greater growth will be improved if all groups keep in mind one sound objective of our economic activity—the improvement of life for the consumer.

We want more and better goods at stable or decreasing prices. As consumers, we are prepared to buy those goods and through our increased purchases stimulate business to continuing growth.

If business and labor keep the consumer in mind, they will bargain with one another more effectively in the national interest.

On the one hand business will place more emphasis upon a liberal and statesmanlike price policy. By thinking first about setting prices at the point where more people can buy their goods, they will widen their market and increase their efficiency. Some of our most imaginative and progressive business leaders have followed the practice of setting their prices to reach the widest possible market and then finding ways to lower their costs to meet their prices. It is interesting to recall a statement of Henry Ford with reference to pricing: "Our policy is to reduce the price, extend the operations, and improve the article. You will notice that the reduction of price comes first."

If management can demonstrate to labor that it seriously intends to sacrifice some of its profits in the interest of the consumer, labor should be willing to modify its own demands. Such a *quid pro quo* on the part of management should make a powerful appeal to the worker, who is also a consumer. As a partner with management in the production of goods, he is interested in expanding markets, which in turn mean greater productivity, and, in the end, good wages. At every council table around which negotiations between labor and management are conducted, the consumer is the unseen, though deeply interested, party. No one pleads on his behalf. Enlightened management and enlightened labor, however, should know what his interests are and that, in the long run, they will both fare better by giving him the fullest consideration.

The welfare of the consumer must be in the mind of the farmer when he asks for public support of agricultural prices.

The interests of the consumer must be a first concern of government as it attempts to bring about a balance among the various groups which produce the goods and services we use. The welfare of the consumer is the foundation of our strength. We must keep his welfare in mind if we are to grow stronger as a democracy.

PRESENTATION OF THE LIBRARY OF TRADE PUBLICATIONS OF C.M.&S.A. TO N.C.A.

By J. C. Whetzel, President, Canning Machinery & Supplies Association

Those of us of the Canning Machinery & Supplies Association appreciate very much the privilege of having a place in your General Session. We have tried to work with and for the National Canners Association over a long period of years—43, I believe, including the present Convention.

While our primary function has been the planning and conducting of an Exhibit of Canning Machinery and Supplies, which exhibit extends as far back as 1885 but which became official with the incorporation of the National Canners Association and also the Canning Machinery & Supplies Association 43 years ago. We do consider also that we have some responsibility in assisting the N.C.A. in planning and carrying out the Convention, including such entertainment features as befit service to our good friends and customers.

During these many years one of our activities has been the collection and preservation in bound volumes at our Battle Creek, Michigan, office of the periodicals and trade publications of the canning industry. Early contributions to this library were made by the Daniel Trench family and other pioneers including the names of Trego, Judge, and Stare. Recently this collection was augmented by the Deming volumes through the courtesy of the American Can Company. I would be remiss if I did not also mention the fine continued efforts in this direction by our well-known and efficient Secretary, Sam Gorsline, without whose efforts I question whether we would have the present collection.

Mr. Taylor, reading from the Resolution adopted by the Board of the Canning Machinery & Supplies Association. . . .

"Whereas, the Canning Machinery and Supplies Association have, during the past twenty years, accumulated the Canning Publications issued during that period and have added to this collection many Volumes of Canning Publications held by private individuals;

"And Whereas, the sole purpose of collecting this Library of Canning Publications consisting of Three Hundred and Forty-five Bound Volumes, some of which date from 1895, has been to make available to the Canning Industry such Literature for Research and Reference;

"And Whereas, the National Canners Association will have available in the new National Canners Building in Washington, D. C. a Reference Library for the use of the Canning Industry;

"Now be it Resolved, that the Canning Machinery & Supplies Association, through its Board of Directors,

"Do tender this Library of Canning Publications as a gift to the National Canners Association, with its Compliments and Best Wishes."

Mr. Taylor, I have the honor of presenting this token of the Canning Library and the actual volumes described herein will be delivered as soon as your fine new building is ready.

SCIENCE FOR SURVIVAL

By Dr. Detlev W. Bronk, President, The Johns Hopkins University, Baltimore, Md.

On entering this city last night I was reminded of the times during the recent war when I came here to visit the Air Force Center for the recuperation and reassignment of our combat fliers. I was reminded of those days by the contrast with today.

Those young men were then typical of our nation. America was united by a common purpose, buoyed by courage, confident that we would certainly achieve our clear objectives. Few failed to feel that our certain victory would be a victory of virtue.

Four years have passed since we achieved freedom from the immediate threat of violence by war, but in those four years we have formed no clear vision of new objectives. There is no unity of purpose which transcends selfish aims and stirs our hopes and courage. On the contrary, there is doubt and dissidence and paralysis of purpose that could lead to defeat by fear.

There is fear of the spurious unstable power of totalitarian nations. Doubt shakes faith in our ability to maintain our democratic institutions and preserve freedom for individual action. There is fear that we shall be unable to sustain our economic system based upon free enterprise. Doubting the ability and motives of others, men goaded by the hysteria of fear abandon cooperation for persecution and carping criticism. The spectre of want anomalously haunts the timid citizens of a nation envied throughout the world for its achievements and its resources. We live in an anomalous age in which knowledge of men and natural forces gives us undreamed-of powers, but powers which stimulate more fear than faith and courage.

Day after day, scientists add laboratory-created materials to our vast store of natural products, but there is lack of confidence that we can make these material resources generally available to those by whom they are desired.

Communication between the peoples of states and nations requires but moments and yet we fear that the new means of communication may be used by a few to dominate the thoughts of many. The friendly meeting of peoples of widely separated areas is accomplished in a few brief hours, but these new modes of transportation are feared as means of attack and invasion. Our unseen enemies of disease are being vanquished and the span of life increased, but the brilliant hope of medical progress is tarnished by fear of economic limitations on its usefulness, and by the spectre of overpopulation made possible by medical progress.

Whenever I think upon such matters in Washington, I must confess that I am shocked to sadness that the fear could sap the confidence and courage of so many who have so little faith in the vigor and rightness of American ideals. In that magnificent city, which is a symbol of the freedom of individuals to participate in the direction of their social destiny, fear for the future seems a shameful thing. Whenever I look upon the dome of our nation's Capitol, it seems unthinkable that 150,000,000 free Americans, fortified by knowledge should have less faith in the future of democracy than did our ancestral pioneers.

Through the faith and efforts of its builders our nation has grown in stature to the greatest nation in the world, heavy with responsibility but endowed with vast powers for great achievement. Now, as in the days of our nation's founders, the rights of the citizen are still a primary right of our democracy.

The most precious of these rights is the privilege of participating in the government of the people by the people. Thus to share in shaping the future of the nation is the most important of our rseponsibilities. Government of the people, by the people, for the people, has never been free from the threat of those who seek for selfish power. Today the selfish few have available to them the vast powers of science, and they find unwitting allies among the many who abdicate their freedom of thought and action. If we lose that freedom for which our ancestors faced danger and death, it will be because too many are indifferent to the value of the freedom they have the power to maintain.

If a remote government by few ultimately controls the affairs of many, it will be because individuals in craven fear have shirked their responsibility to solve the problems which confront them. Those who belittle our democracy, because of its imperfections, ignore the vast potentialities for improvement by the efforts of individuals who are free to think and act with due regard for the rights of others.

Governments possess no superhuman power to solve problems unsolvable by humans, for governments are composed of no more than mortals. Governments exceed the power of individuals only when governments are a focus for the thoughts and efforts of its citizens; therein lies the strength of our democracy. Its future is endangered less by those who would seize power than by the many who refuse to accept their democratic responsibility for the affairs of their nation.

You and I should delude ourselves if we did not admit that civilization is more complex than it has ever been before and that the times are more confused. We should belittle our courage if we did not agree that satisfaction is greatest in doing the most difficult tasks for the greatest stakes. Science is one of our most powerful tools in the achievement of those tasks.

Energy has been harnessed so as to increase without limit the unaided power of men and women. Transportation makes it possible to carry men and food and the supplies of industry so that all the world could, if we would, be one. Communication and vision across great spaces supplement transportation in bridging the barriers of distance. The sciences of climatology and construction provide for man environments suitable for life, no matter where he be—on land, below the sea, or in the upper reaches of the atmosphere. Through science the nature of life itself is better understood; disease is vanquished, health and the span of life increased.

But science is more than the means for improving human welfare. It is the necessary agent of mere survival.

Older means of life have passed. With increasing population mere survival now depends upon science, lest life be suppressed by starvation. The life of modern civilization which centers in towns and cities would be quite impossible without the use of science and technology. All this no thinking man or woman will deny.

Nor will many deny my next assertion, which is this: Survival depends upon the growth of science by more research. One need not be an historian of nations, one need not be well versed in the ways of human nature, one need not be a scientist to know that men and nations are not static. Human nature and the forces of inanimate nature are such that change there will always be. A nation that has sensed the satisfactions brought by science will not be content, I think, to suffer decay through ignorance and indifference. Nor will the problems which now confront us as a result of scientific achievements of the past solve themselves. They can be solved and our ways of life improved only if research is brought to bear upon new problems created by each new scientific advance.

For Americans, these are times pregnant with responsibility and challenge for we have become a great world power faced by the necessity for decisions which will shape the future of world civilization, such as the problem of which you and I are all aware on this momentous day.

That America has reached this status is due to the vigor of our people, made vigorous by the exercise of individual effort and initiative, fostered by our freedom to follow the lure of our curiosity and by our ingenuity. That this is so is due also to the achievements of our scientists and engineers who have helped create a civilization largely based on science.

But these are times in which we cannot rest in pride and be complacent, trusting false security in our scientific achievements.

As a scientist, I would stress three hazards which face us in our present situation.

The first is this: We delude ourselves when we talk of living in an age of science. We are among the few people of the world who directly benefit from science. The scientific cultures of America and Western Europe are very different from those of many other regions. If science in America expands without a corresponding development everywhere, there will be a further imbalance of world cultures and world power. There lies a grave threat to the peace and stability of the world.

The use of modern science gives a nation tremendous power and material advantages. Accordingly, it is natural in these days of international tension that those countries in which the practical aspects of science are developed to a high degree should be feared and envied for the benefits they reap.

America, however, has accepted the responsibility to share its technical methods and its knowledge, excepting that of military value to potential aggressors, with all peoples and especially with those who are victims of poverty and disease and ignorance. Such is not the case in those nations in which science is used as a weapon of aggression to increase the power of a selfish few.

You can rest assured, as do I, that American supremacy and security will not go unchallenged by those who have learned to use science to suppress human freedom rather than to use science as a means for enriching the material and spiritual welfare of every man.

This threat which we face accents what I consider to be a second hazard in the present scientific situation. It is this:

In a democracy where all should govern, it is tragic that there are but few who understand the meaning and the significance of science upon which their very life depends. You may reply that more scientists and engineers are now supported than ever was the case before. And I could add that the number of industrial laboratories has increased more than tenfold in but a score of years. Private and governmental finance of science has risen from $100,000,000 to $1,000,000,000. This is true and in our national interest. But much of this is for the practical development of military strength and industry. That, too, is good. But not so good is the fact that there is little realization of the need for free exploration of the frontiers of science and little support for that.

If you would doubt this assertion, I suggest that you compare the compensation of scientists in universities and the support of science within university laboratories with that which is available in military establishments and in industrial organizations. I suggest that you make that comparison as the National Research Council has just done and then recall that the universities have been the breeding grounds for the scientists of the future and the homes of many of the brilliant new ideas upon which practical developments of great value have ultimately been based.

This emphasis on the practical values of science is not new, but it takes on new significance because of our growing dependence on science. Despite that, I would emphasize that the primary and most potent motive of the scientist is curiosity. Science is an intellectual adventure of individual scientists. Do not misunderstand me. I realize that to be an isolationist in science is quite impossible. The course of new discoveries starts from the territory of established knowledge, the genesis of new ideas is catalyzed by the work and thoughts of others. Nor is it reasonable to assume that a division of experimental and theoretical labor is unnecessary for the accomplishment of most scientific tasks. But I know of no evidence which disproves the thesis that new ideas and concepts are formed within a single mind. Great scientific discoveries have been made and will be made by individuals who work without direction from others, as surely as will the creation of great music and sculpture and art.

DR. DETLEV W. BRONK

During this period when scientific activities are rapidly increasing, it would be well to consider how to nurture curiosity which is so common in childhood and so quickly suppressed by civilization. Hostility toward freedom for the scientist's curiosity goes back to the days of Bacon, who inspired the creation of the great Royal Society. Said Graville, his friend, "Science should first purge itself of curiosity and turn its attention to practical rather than theoretical values, for

'Learning is a bunch of grapes
'Hung up among the thorns where
but by caution
'None the harme can miss.'"

Curiosity has certainly caused a great deal of trouble from the days of the Garden of Eden to Hiroshima but, human nature being what it is, I doubt whether curiosity can ever be suppressed. If curiosity is to benefit mankind, curiosity had best be developed through the agency of the disciplined mind of a scientist, whether he be called natural or social.

This attitude toward the practical values of science at the expense of fundamental exploration has been characteristic of America. Busy with the development of our geographical frontiers and our vast natural resources, American science has largely rested on the foundation of European science. But times have changed. Because of our responsibility for world leadership and the relative abilities of Europe and America to support research, we will not in the future be able to skim off the cream of new ideas to apply for our advantage through technology.

Also I would stress with you the fact that our geographical frontiers are gone and only the endless frontiers of science now remain.

I ask you to believe me when I say that in the frontiers of science lies hope for our future welfare and survival. If you will not take this on faith, I would ask you to consider the ways and influence of scientific pioneers who gave no thought as to what was to be the ultimate, practical value of the work they did in following their curiosity.

I was thus led to consider this one Sunday afternoon, as I stood in the Great Court of Trinity College, Cambridge, watching the flying fortresses return from one of their aerial assaults against the Nazis' European fortress. As they came over by the score, totaling hundreds, at such an altitude that they seemed to hang suspended in the soft, English evening sky, I was then reminded that I was standing outside the rooms of Isaac Newton. My great pride in American supremacy was eased a little, for I recalled that in those rooms the laws of gravitation and fundamental principles of mechanics had been discovered. Those laws which govern human flight had been discovered with no thought that they would ultimately make possible the defense of Western democracy.

Nor can I go to the rooms of the Royal Institution, which housed the

little laboratory of Michael Faraday, without remembering that our great American power industry was made possible by the discoveries of that simple physicist working to understand the laws of nature. When I fly over the granary of America I cannot easily forget Gregor Mendel's contribution to the production of our present food supply because of his discoveries in the gardens of a monastery, driven by a desire to know that which was not known.

When a few years ago, my friend, Neils Bohr, sat in my study discussing with me the consequences of atomic energy, I saw in that simple professor in the University of Copenhagen, the originator of a new world order, whether it be a world destroyed by the use of the atomic bomb, or whether it be a world recreated by the peaceful uses of atomic energy.

I would be more confident of the future of this nation if a wide-spread understanding of science were made manifest by the willingness of American industry to provide for the two great agencies of American scientists, the National Academy of Science and the National Research Council, merely $1,000,000 a year to be used by the scientists themselves in training promising young scientists to be their successors and for the exploration of brilliant new ideas. But I speak bluntly when I say that I see no evidence that American industry will do so.

I am aware of the fact that there is recurrent hope that a National Science Foundation may be created for this purpose. I am one who favors such an organization. But this brings me to my third concern.

As a firm believer in the precious values of a democracy, I hope that government will supplement but not supplant the efforts of private individuals and private industry in the development of science for our survival. I repeat that governments possess no superhuman power to solve problems not solved by humans, for governments comprise but mortals. We hang on the horns of a dilemma. Citizens who plead inability to support universities and science because of government taxation admit the need for more education and research if civilization is to survive. If those same citizens refer the responsibility for science to the government, they merely ask others to do with their own tax-supported dollars that which they could better do themselves.

I am no analyst of political motives, but I seldom see government do in the field of science that which has been done by private initiative. It is my firm belief that the people of this country—as individuals and groups of individuals—should assume their responsibility for their scientific future rather than delegate their power to a few. We need in science more examples of individual action and cooperative organizations such as yours; more examples of cooperative action directed by individuals who thus control their own future.

As a scientist, I am well aware that much of the anxiety and confusion of today is due to science. Science frees men from the hazards of ignorance and the uncontrolled domination of natural forces. But science and technology also create a complex civilization that taxes the abilities and spirits of men. The internal combustion engine that cultivates fields for starving millions is the same agent that drives tanks and bombers on their missions of destruction. Modern cities of great beauty, built through science, contain slums which blight the lives of men. Industries which create new products for human use dwarf the spirits of those who must toil without the satisfaction of creative effort.

Science provides us with the building stones of a better world but the world will be as we choose to make it.

As we consider our place in the scientific world of today, it is well that we remember our relationship to the peoples of other lands. It would be unnatural if those of the world who are starving and ill-clothed and homeless did not seek our material assistance which we can make available to them, because of our technological resources. But it is my deep conviction, derived from contacts with the peoples of many war-torn lands, that the people of the world desire of us more than food and more than shelter. They prize the vision of a nation which preserves the rights of individuals to work for a common purpose and to resolve differences of opinion by free discussion. They look to us as a nation to prove the power of free men and women, to create for themselves and others a more satisfying life through a knowledge of the past and the new discoveries of science.

You, of this Association, combine knowledge of human requirements with the industrial and scientific means for satisfying those human needs. You have a unique opportunity to show how science can be devoted to the satisfaction of human welfare. You have a unique opportunity to prove that private citizens can use science and technology in order to satisfy more adequately the needs of the nation and thus preserve the foundations of a free American democracy.

BREAKERS AHEAD

By Clarence B. Randall, President, Inland Steel Company, Chicago, Ill.

It is a great privilege for me to be here. I am a newcomer among you, one who would like to know you better, one who is simply overwhelmed with the kindness which he has received. Since the moment I rose on the Boardwalk this morning, the kindly protection of this Association has been thrown about me. I am going to go back to a very dull life in the status to which I am accustomed in Chicago.

As I suppose you know, I am the newest recruit to so-called top management in the steel industry. I haven't yet lived out my first year of office. I sometimes think that will be a very magnificent achievement if I can accomplish it. To say that that first year has been rugged I think would be the understatement of the afternoon.

So if you don't mind, I should like to let my hair down a bit this afternoon and talk to you informally out of my frustrations. Here we are in the middle of the 19th Century—there is a good deal of argument, I understand, among people, among columnists, as to whether the exact mid-point was last December 31 or next December 31. I did see the 19th Century begin. I always remember that as a great pleasure in a small town where I was born in New York State, because that was the first night my mother let me stay up until midnight and eat doughnuts.

Now I'd like to do a sort of a motion picture throwback for a few minutes and compare my job today with the job of those hearty fellows who were presidents of steel companies when this century began.

Those were the giants of our industry in those days. If you should happen to take the pains to look it up, you would find that between October, say, of 1899, and the Spring of 1901, there came into being in their present recognizable form practically all of the principal steel companies—U. S. Steel, Bethlehem, Republic, Youngstown, Jones & Laughlin, Armco, Inland—curiously enough, all became nationally recognized institutions operating in their present locations in that extraordinarily short period of time. That was when the modern steel industry in America was born and, for that matter, the modern steel industry anywhere in the world. They were great men who did that. They were builders. In the Nineties it was Carnegie and Frick, Phipps, Butler and other names that will come in your mind, and at the turn of the century, Gary and Schwab, B. F. Jones, Palmer and others whose names will come to your mind, not forgetting Julian Kennedy, the engineer.

Now those men, around 1900, dealt with problems that were physical and material; the problems that face a

president of a steel company of today are principally in the realm of ideas. That is the change of 50 years. Now those men did perfectly magnificent things. They opened up the Masaba Range and gave the world the iron ore deposits upon which two wars have been won and 50 years of peacetime progress have been based. They built the railroads from the iron mines to Lake Superior. They built the steel ships that carry the ore; they built the railroads from Lake Erie to Pittsburgh and Youngstown. They built vast plants. They acquired the coal reserves in Kentucky, West Virginia, Pennsylvania and Ohio. They were tough. They were pretty dour. Men who tame the wilderness are never gentle. Some of the things they did then are creating the social problems of today and the public relations problems of our industry. They were selfish, some of them. And yet the genius of the enterprise system is that a man's intense selfishness may itself be the power that unleashes great good for mankind.

Now in those days had you gone to the desk of the president of a steel company you would have found it covered with two things—blue prints and cost statements. Contrast that with today. Do not think for a moment that I would suggest that any of that has ceased to be important in the life of an executive of a steel company. I must know production. I must know selling. I must know finance. But the point that I am trying to make is this: I must know what goes on inside the plant, but if I must forego anything, I must remember that it is still more important that I know what goes on outside the plants. I am convinced that my company can meet the toughest competition today in the steel industry and survive. That's the commercial. But I am not persuaded that the idea for which my company stands in the world of ideas can survive. One of the men who founded my company, God bless him, in 1893, is still living. Probably never again in the lifetime of any person in this room will one man, in his lifetime, see a new industry go from scratch to the point where my company is today, and it is a small steel company. This is a changing world, but the fight which I must make to preserve that idea is in the realm of ideas and lies not in physical and material things. If I must delegate, I should delegate, first, production and sales and finance, and never delegate my responsibility in the world of ideas.

I must know a good idea when I see it and fight for it. I must know a bad idea and challenge it instantly. If a bad idea masquerades as a good idea I must have discernment to recognize that fraud and expose it in all its starkness and courage and ability so to do.

If there is a mixture of truth and falsehood, I must know how to segregate one from the other and point that up to the public.

And so if I may for a few minutes, I am going to talk about some of the false ideas that are masquerading as good ideas in the thinking of America and in the thinking of the world. I shall mention but three, but I shall fail if I do not stimulate this thinking in your minds to the point where you will think of a dozen others.

The first is that current falsehood that bigness in business is necessarily an evil. Obviously that can't be true. No institution, whether in business or education, should be judged except in terms of the manner in which and the extent to which it serves the welfare of the people, and that is not a function of size. There is a right size for every business. And that optimum size is determined not by any yardstick conceived by a bureaucrat in Washington, but by external factors. It will vary from one industry to the next. It will vary within an industry. It depends upon the inherent limitations with which that business develops. One of the things that prevents business from becoming too big is the internal disease of growing to a point where it cannot be effectively managed. And just as the wolves follow the herd and pick out the slow and clumsy and weak animal, so the wolves of competition will forever chop down the badly managed and ineffective because of size.

In the steel industry the optimum size, it seems to me, is one where the investor has the security of complete integration; where the company is so situated with respect to reserves of raw material and so balanced with respect to manufacturing capacity, that it can forever hold its own in the competition.

Now the fraud on the American public, in this instance, lies in the hypocrisy of this idea. Those who attack bigness in business, attack only our side of the bargaining table. They have the eye open to bigness in management and have the eye closed to bigness in labor. It can't be right, that as we sit here this afternoon, one man shall decide and has decided that every home in America be cold. That can't be right in a democracy.

In steel it can't be right that one man in Pittsburgh has the power to determine whether or not 700 plants shall operate and if so, upon what terms and conditions. The public prosecutor turns his wrath upon the A & P, who by no man's theory can conceivably have a monopoly in food distribution, who have served the American people well, as you know. The American housewife is in their debt. They could not conceivably cause an increase in the price of every retail commodity to every housewife, yet the Teamsters Union can do exactly that, and their bigness is forgotten. And, of course, the ultimate hypocrisy in this bigness idea is that those who declaim against bigness in business, are themselves the advocates of the ultimate total bigness—the bigness of Government.

The whole idea contains essential fraud and, if the enterprise I have the privilege of leading is to continue, that idea must be attacked—mercilessly and intelligently.

The second idea, which is a strange mixture of truth and falsehood, and which holds great peril for this nation, as I see it, is that greatly abused word which seems to be on the lips of everyone in the world today—security. Here in that baffling subject the very deepest aspirations of the human heart are being distorted and prostituted to implement the personal power of politicians and labor leaders.

Our ancestors knew security, but they knew it only in the strength of their right arms and the perspiration of their brows as they conquered our wilderness. Every school child knows, however, that those were the great Americans, Washington and Jefferson, John Adams, John Quincy Adams, Calhoun, and Clay, they were men we all revere. They sought and provided their own security; they understood the world of ideas; they sensed freedom when others were callous to its loss, and we might well emulate them.

It seems to me a strange thing that in the folklore of all savage peoples everywhere the ultimate millenium is a paradise where one is fed and clothed and bathed and entertained by others without effort. That folklore is fast becoming legal in the United States.

And the falsity in that concept is that people are taught to seek security with no explanation as to the cost. Now by cost I do not mean money, formidable as that may be. Money is a symbol. I mean cost in human values and the loss that mankind faces in the search of security, the loss of personal liberty and the loss of the economic strength upon which society rests.

For both of those we may turn to England, the foremost security state, and what is the situation?

First, as to personal liberty. If my recollection is correct, England is the only nation on the continent of Europe today where rationing is still in effect. Wherever there is a return of private enterprise, rationing disappears; where the controls to support the security state are in effect, rationing is in effect. The government in England today pries into every corner of the private individual's life. He cannot move from one house to another without a permit. He cannot change his job without a permit, and I was quite surprised to find the other day that the government presently in England, so as to implement its controls over money, privately opens mail addressed to individuals, watching for black market transactions. It then seals the letters up and the individual does not

know they have been opened. That in England, the mother of our liberties.

In the current campaign, as you know, management has been attacked for speaking its piece—sugar and cement industries, on their containers, carrying their viewpoint on controls, have been threatened with prosecution under the sedition laws for resisting government. But think for a moment, of the other aspect in England on the strangulation of the economy through the controls required to provide security.

I had the great privilege two nights ago of privately having dinner with that distinguished London economist, Dr. Hayek, who wrote the "Road to Serfdom." In such an intelligent group as this, I have no doubt there has been a copy of the "Road to Serfdom" on every desk for years and in every home. If not, I commend it to you. It will keep you awake nights—it is so powerful. And here is the picture that Dr. Hayek gave.

Today, he said, it would be an impossibility to begin a new business in England. If you had that rash and mad idea you would go first to a board to seek a permit to raise the capital. You would then go to a board to seek a permit to acquire the land. Then to a board to seek a permit to secure the raw materials. Then to a board to secure a permit to recruit the labor. At all boards it would be necessary to give assurance that the production would be entirely for export. Quite conceivably the board that was charged with determining whether you might raise the capital would say "yes," and the board charged with the duty of saying whether you could recruit the labor would say "no" because there is no common purpose or theme running through all of the boards.

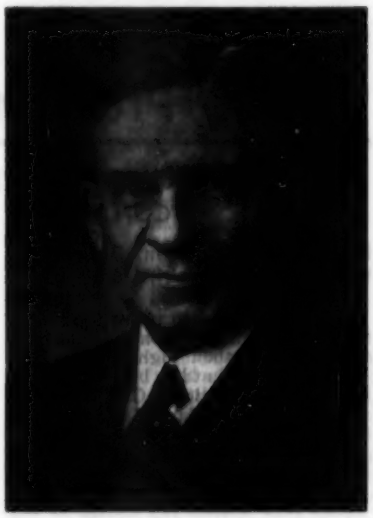
But the thing that astonished me most was the acquisition of the land. At the present time in England, no change whatsoever in use of a piece of land except in the field of agriculture—mark you, the farmer in any land is the darling of government—may be made without a government permit, and this is how that board operates.

They first determine the value of the land in its present use. This is an intellectual impossibility because, since there are no free transactions of the willing buyer and the willing seller, there is no standard of value for that land. They guess at that. They then fix the value of the land as they think it will be after your new use has been completed and then it is their duty to expropriate that entire gain to the government, leaving you totally without incentive for the enterprise. But since even the most sterling advocate of the labor way of life in England knows that that won't work, he cheats, and the buyer cheats, and they haggle—and the government finally grants the permit for the least possible gain to the entrepreneur which they think he can get by with.

He gave two illustrations:

(1) A man ran a forge where he employed himself and no one else. He was in a bad location. He wanted to move about a mile and he wanted to sell his property. He found a fellow who wanted to open a grocery store who would buy it; when this process was finished, the man who wanted to open a grocery store to employed himself and no one else, succeeding a man operating a forge who employed himself and no one else, was assessed 900 pounds for the privilege.

(2) He said there was a restaurant located on the sixth floor of a building. They thought their business



CLARENCE B. RANDALL

would be better if they moved down to the third floor. It turned out that that was a new use of the property and for the privilege of moving a restaurant three floors down they had to pay several hundred pounds.

Now, that, my friends, is the strangulation that has come there and that will come to the United States if the American people seek security without counting economic costs and without counting loss of personal freedom.

And then the third of these intangible ideas which masquerade as good when in fact they are evil, is the spread of pattern-thinking across the country. I am sorry to say that this is a function of industry-wide bargaining. I say I am sorry because I regret that in earlier years there were industrialists whom I think then and now were misguided; who advocated industry-wide bargaining. Their motivation was fear. They said the unions had grown too big—that we would all be lost if we didn't get as big as they. We are certainly at that point now in the coal industry. It is a real question now, not only whether all of the operators of the coal mines are as big as the union, but whether the people of the Uinted States are as big as the coal union.

Now, the thing that comes about from pattern-thinking in the country is the loss of individual choice. I am sorry I didn't hear my friend Frank Lunding speak to you yesterday because he said some things, I am told, that would exactly fit my thesis.

Certainly the most important thing in the world today to the American housewife whom you men serve is freedom of choice. She wants to go into the grocery in the morning and see the shelves alive with exciting new containers and new products and she wants to take some and reject others and she would jolly well like to see anybody interfere with her. Freedom of choice is the most essential aspect of freedom to her. And yet, when she takes these packages home and from them fills the dinner bucket of her man, she sends him out into a world where freedom of individual choice is fast disappearing. He is protected in his choice to join a union. He is not protected in his choice *not* to join a union. He has no control over the days on which he shall work nor the hours he shall work. Particular considerations in his family—the illness of his wife, or his children, the necessities of his aged father and mother can never permit him to make a choice to work if someone in Pittsburgh decides that he shall not work.

We have recently gone through months in which everybody in the steel industry except the man himself has been trying to decide what the man shall do about a pension.

Now, I say, of course, not one word of criticism—I cannot make that too clear about the Bethlehem Steel Company for signing a contract for a pension plan which was in their precise tradition. It was what they believed in. It had been offered voluntarily to their men. It was their way of life. It so happens that my company had a different tradition—whereas that plan which has become the nation-wide pattern was non-contributory in its character; ours was contributory. That was their tradition. The other was our tradition, and they would be the first to agree with me that it is a strange country if men in Pittsburgh shall decide for the management of my company and the employees of my company that we shall have—not the Inland tradition—but the Bethlehem tradition.

Now, it so happens that we did something about that. The Inland tradition was maintained. We have today—we are in the process of offering to our working people—two plans; the so-called Bethlehem plan, and the old Inland plan, and the workingman has the right to make his choice between them. If he should take our

plan he will do some things he cannot do the other way. He can protect his wife which he can't do under the so-called industry plan. There if he retires and dies a month later, the woman who shared his hardships all through his life will have no protection. It seems to me that he is entitled to make a choice about that if he wants to. Under the Inland plan he can leave our company, if he doesn't like his boss (and confidentially, there are some who don't) he can leave and take with him a partially paid pension; and under the Industry Plan, so-called, he can't. He's got to play the hand out for one employer.

The point I am making is this—it can't be right because the Bethlehem Company signed a plan that they believed in in their tradition—that 700 employers who happened to be organized by the steelworkers, must overnight abandon their traditions and take the Bethlehem tradition. That cannot be wholesome in a democracy.

It cannot be right that men in Pittsburgh shall determine that 700 employers, wheresoever situated, shall all pay the same wage. I happen to be interested in the decentralization of industry. I was born in a small country town. It did something for me which I think is hard to duplicate in a large city and I am not referring to my one-time capacity to play the cornet. I think the State of Iowa would have the best economy in the world if it had a series of small agricultural towns serving an agricultural region, but enough small industry to employ the surplus boys and girls near home. The only way such a small enterprise can come into being in Iowa, as distinguished from Chicago, is to pay a lower wage. That is all that they have to offset the difference in freight of moving our steel to Iowa and the finished product back to market. They ought to have the right to pay a lower wage, and the man ought to have the right to receive it if, as I think, he would be wise to bring up his children in a small town instead of a large city. But because of the pattern-thinking imposed upon America by the powerful labor unions, which is going on unchecked, freedom of choice is disappearing.

Now, there are three of the challenges that I see in the world of ideas. What is the job of management in connection with them? Well, obviously, it seems to me that the first job of management today is awareness. We need insight. We need perception into the significance of the things going on about us. We need to have that perception before our enemies have it. Time after time, we, in industry, wheel our lumbering batteries of artillery out too late and find that the enemy has occupied the heights before us. We need to sense the social significance—the social impact of industry—before our enemies sense it. We need industrial "Paul Reveres" to ride about in our own communities, stimulating into action the thinking of our workers, our associates and the public.

I say it is a glorious time to be alive in industry. These are times of battle; times of battle that in many ways reflect the spirit of the American Revolution because today, as then, freedom is the goal, and it seems to me the top priority job of the American executive is to lead and carry a gallant fight in this world of ideas.

And the presence of my distinguished friend here (Dr. Bronk) causes me to add one word, if I may, about education, and I hope he will not misunderstand me. All honor to science, and all honor to the men who give us the facts which make industry—but do we not need today also men who sense the impact of science—men who sense the impact of facts—and know what to do about it? Facts, after all, are in books. Ideas are in the mind. I look to the colleges today to send us, in industry, young men trained to think abstractly as well as concretely. I want around me young men who can shut their eyes and think straight and then open their mouths and talk about it.

And I want young men with a passion for freedom. I wish I might see in every great university young men majoring in freedom—graduate students conducting research into freedom because freedom is the thing that is disappearing before our eyes because men are not discriminating as to the loss of freedom.

Those, my friends, are the challenges that I see for executive leadership today. In your business and in my business we need to know what we believe—we need to tell what we believe—and fight for what we believe.

Fishery Products Conference

NEW INFORMATION ON THE ESSENTIAL AMINO ACID CONTENT OF CANNED FISH

By Dr. E. J. Cameron, Director
Washington Research Laboratory

You have all heard about the industry program on nutrition that has been active now for about eight years. This is the program that has been supported jointly by the National Canners Association and the Can Manufacturers Institute and about which we have reported frequently.[1,2] At this time I shall summarize the general progress of the nutrition program merely by saying that during the course of the project through 1949, a total of 28 grants have been made to nine universities and experiment stations. From this research a total of 35 manuscripts have been published while six are in preparation or have been accepted for publication.

Our activity in nutrition research began in 1942 and it was actuated to a great extent by certain recommendations that had come from the President's conference on nutrition which took place in Washington in 1941. That was during the emergency period and there was a general call to the food industry to supply dietary information concerning its products to a degree far beyond the knowledge then in existence.

The first job was to arrange for the determination of dietary data on canned foods on what appeared to be a stupendous scale. We set out to find what important vitamins and minerals could be expected in a can of peas or in a can of salmon or in some other product. As the information developed it was turned over to the Committee on Food Composition (a subcommittee of the Food and Nutrition Board, National Research Council) to be applied to the use of the armed services and other important groups concerned with dietary matters such as diet planning or evaluation.

In the years that this program has been active it is safe to say that we have secured and published more dietary information on canned foods than exists for any other class of processed or packaged foods.

For the first few years of the program one of the two primary phases of work was centered on vitamins and minerals. The vitamin and mineral story for canned fish is excellent. If you will refer to *Canned Foods in the Nutritional Spotlight*,[3] a valuable publication by the Can Manufacturers Institute, or to *Nutritive Values of Average Size Servings of Canned Foods*,[4] you will see at a glance the outstanding dietary contribution supplied by canned fish, particularly of protein, fat, calcium, phosphorus, riboflavin, and niacin, with other dietary factors present in significant amounts. And at this point I wish to emphasize that this is the most authoritative information that has been obtained for canned fish as a class of foods. The data are already incorporated in the most up-to-date tables on food composition and are therefore widely used for reference by people concerned with dietary recommendations.

Now we come to consideration of that very important food component in canned fish—protein. Until recent

Numerical references refer to Bibliography.

years protein has been considered for dietitic purposes as a single fixed food component. Less consideration was given to the different kinds of proteins that occur and the significance of their different qualities or characteristics.

Actually, proteins are very large chemical molecules made up of combined amino acids. When a protein is digested it is broken down into the amino acids or related substances known as peptids which make up its composition. They enter into the circulation and are used in body building and repair.

All proteins contain nitrogen and certain of them sulfur as well. However, each protein has its own individual composition and changes in protein are made by breaking them down and reassembling the constituent amino acids. For example, in the process of digestion, egg albumen will be split into its constituent amino acids and these may be recombined to form proteins entirely unlike the original albumen.

The description of amino acids as the "building blocks" or "structural elements" of proteins is an apt one, although a bit hackneyed. At least this showed the relationship between the acids and proteins. At least twenty of them have been identified of which at least eight are essential to man.

I want to dwell shortly on the meaning of the term "essential" because in our studies on canned fish, later to be discussed, primary consideration was given to the "essential" amino acids.

The body tissues are capable of making (or synthesizing) fourteen or more of the amino acids necessary to meet physiologic requirements—that is, to maintain body growth and repair. These may be referred to as "dispensable" amino acids. The body tissues are not capable of making the "essential" amino acids in sufficient amounts to supply physiologic needs; therefore they must be consumed as such and the natural way to supply them is in foods that contain them.

When a protein contains all the "essential" amino acids it is called "complete" and such proteins are found in fish, meat, milk, eggs, and fowl. Vegetable proteins will also supply certain of the essentials and by eating a combination of them more of the essentials may be supplied.

Where a person is deprived of any of the essential amino acids the early consequences are much more dramatic than is usually the case when an important vitamin is lacking. The lack of a vitamin usually asserts itself slowly, although the end result may be very severe. The absence of an essential amino acid creates early manifestations that point unmistakably to profound disorder.

In the past 40 years much has been learned about the differing biological value of various proteins and the concept of essential amino acids, much of it stemming from the early work of Osborne and Mendel.[5] It has only recently been possible to put this knowledge on an exact basis, because previously methods were lacking for measuring the biological values in man and the precise amounts of the individual amino acids. Dr. W. C. Rose, of the University of Illinois, has conducted major investigations in this field in a six-year study supported by grants from The Nutrition Foundation, Inc.[6]

In 1942, after conducting broad basic studies on animals, Rose actually undertook study in the human species.[7] His subjects must have possessed great fortitude because they had to subsist on a most unappetizing diet in which were fed the amino acids (chemically pure) that were under test. One at a time, these acids were removed from the diet and the effects of the human subjects were noted. Eight of ten amino acids that had been shown to be indispensable for animals were found to be indispensible also for man.

When one of these "essentials" was removed from the diet, the subject shortly went into pronounced "negative balance." This means that the subject excreted more nitrogen than he consumed which means, further that he was using nitrogen from his own body protein. This lapse into negative nitrogen balance was accompanied by, to quote from Dr. Rose, "a profound failure in appetite, a sensation of extreme fatigue, and a marked increase in nervous irritability." These effects took place even in the absence of knowledge by the subjects of the dietary alteration. When the missing amino acid was returned to the diet the subject came into nitrogen balance again and his symptoms disappeared. It can be sensed from Dr. Rose's work that the essential amino acids assume an importance comparable with vitamins in maintaining normal nutrition and life processes.

Protein as an element in nutrition was first emphasized by Mülder, a Dutch chemist, in 1839. He gave it the name "protein" which drew from the Greek, meaning "first." It was about 70 years later that vitamins came significantly into the nutrition picture and these "accessory factors" have been in the nutrition limelight ever since. In promotional publicity they have frequently been overemphasized and, to a marked extent, misused. Now the pendulum swings back to protein and the amino acid story becomes a principal nutrition topic of the day.

Dr. James S. McLester,[8] writing in the *Journal of the American Medical Association*, rationalizes certain of the prominent enthusiasms that have occurred in nutritional thinking and publicity. Significantly, the title of his article is "Protein Comes Into Its Own." He resolved his thesis into five parts, of which three are most important to the purposes of this statement: (1) The energy era—in which attention to calories came first; (2) the vitamin era "most colorful of all" which followed the knowledge that purified diets alone will not sustain life; and (3) the protein era—which McLester says is in keeping with the origin of the name "first."

Certain of McLester's observations, which I offer unrelatedly, are interesting, and should be pertinent to those who may be interested in the promotional field of nutrition. In regard to minerals he states: "Minerals have never fired the imagination of the public as have the vitamins." As to thinking in this stage of the vitamin era, he says: "As this enthusiasm (for vitamins) levels out, certain conservative tendencies may be seen. First is the recognition by nutritionists that if a person is well nourished and his vitamin equipment adequate no nutritional benefit will accrue from the further taking of these substances." "—man should, as a rule take his vitamins in the form of natural food." "The vitamin era is being rounded out with a wholesome appreciation of the importance of simple, good food. A few good nutritionists are even calling themselves 'ham and eggs' nutritionists." Finally, "The picture changes and today we are in the protein era."

About five years ago nutritionists and educational experts in the meat industry anticipated and placed into action certain of the premises so forcefully spelled out by Dr. McLester. Since then a factual story of protein has been given by the American Meat Institute to the public and particularly to nutritionists, through advertisements in the *Journal of the American Medical Association*, *Hygeia*, and some of the popular magazines. The program to date must be regarded as a splendid example of educational publicity and other branches of the food industry would do well to follow the pattern.

This brings me now to a summary of our own (N.C.A.-C.M.I.) protein studies on canned fish. Rather early in the nutrition program our Committee became interested in the reports by Nutrition Foundation of Dr. Rose's spectacular findings in the field of amino acid research. At that time we considered whether we should attempt studies on the amino acid content of high protein canned foods. At that time we didn't get past the discussion stage because the chemical methods for assay of amino acids were used almost entirely and they were very expensive. The less expensive microbiological methods were in the formative stage. Moreover, the significance of the essential amino acids had not been defined then to the point that would justify a departure from the existing program.

By 1948, the use of microbiological methods for amino acid estimation was generally accepted and it appeared practical to undertake a broad

protein survey on a number of canned fish and meat products. Grants for this purpose were made to two universities which are outstanding in the field of nutrition research and in which pioneer work was done in the development and use of microbiological methods for the quantitative determination of amino acids—the University of California in Los Angeles and the University of Wisconsin. Reports of the surveys conducted by the two universities have been published very recently.[9,10] The objects of this inter-laboratory amino acid project were:[9] "(a) to carry out a rather extensive survey of the amino acid content of some common protein foodstuffs; (b) to establish the reliability of microbiological assay techniques; and (c) to obtain information concerning the extent to which canning may affect the amino acid content of the proteins in canned foods." A description of the samples analyzed; the source of samples; the experimental details; and the detailed results will be found in the reports of the two universities and in a release soon to issue from the Fishery Products Division of the National Canners Association. Right now I shall confine myself primarily to a presentation of the results of the assays for the essential amino acids as they were determined for *canned* fish products. Samples of raw and precooked fish were tested as well but the findings may be disposed of with the conclusion reached by both laboratories that there was no demonstration of any significant effect of heat processing on the essential amino acid composition of the samples analyzed.

Issued very shortly before the reports with which we are concerned was a very timely publication by Dr. Rose[11] titled *Amino Acid Requirements of Man*. In this report he described his method used in determining the requirements and tabulates his conclusions as follows:

TABLE 1

Minimum and Recommended Intakes of Essential Amino Acids for Normal Men

(Strictly Tentative Values)

Amino Acid	Minimum Daily Requirement (grams)	Recommended Daily Intake (grams)
Tryptophan	0.25	0.5
Phenylalanine	1.10	2.2
Lysine	0.80	1.6
Threonine	0.50	1.0
Valine	0.80	1.6
Methionine	1.10	2.2
Leucine	1.10	2.2
Isoleucine	0.70	1.4

The basis for these values are briefly as follows: Male students served as experimental subjects. They were fed with a basic diet of known composition to which were added amino acid mixtures appropriate to the tests that were made. By the successive removal from such diets of single amino acids, the nutritive significance of each was established (qualitative studies). Then (quantitative) each of the "essentials" was reduced in turn until a distinctly negative nitrogen balance was induced (more nitrogen excreted than consumed). After this, the intake of the amino acid being tested was raised until a consistently positive balance was attained. The amount of a particular amino acid necessary to maintain the balance was called the "minimum daily requirement" and twice this amount the "recommended daily intake." Dr. Rose emphasizes that these are strictly tentative values.

Thus, in Table 1 are shown the amounts (in grams) of the "essentials" necessary to satisfy the daily minimum requirements and the recommended daily intake.

In Table 2, we have assembled information derived from the N.C.A.-C.M.I. studies[10] which shows the amounts per servings in grams of protein and the essential amino acids that were found in the canned fishery products that were tested.

In Table 3, we have combined data presented in Tables 1 and 2 to show the protein and amino acid values in terms of the percentages of recommended daily allowance (for protein) and recommended daily intake (for the amino acids).

Table 3 contains the substance of our present protein story on canned fish and for the purpose of emphasis we have prepared a series of charts (Figures 1-9) which shows graphically the interpretive information for each of the fishery products that were included in the survey.

You will note that the essential amino acid patterns for the various fishery products are very similar. Two of them (lysine and threonine) predominate in all samples, at times

TABLE 2

Protein and Amino Acid Contents Per Servings of Canned Fishery Products Tested in the N.C.A.-C.M.I. Nutrition Program [1]

Product	Serving [2] grams	Protein grams	Amino Acid Contents (grams)							
			Isoleucine	Leucine	Lysine	Methionine	Phenylalanine	Threonine	Tryptophan	Valine
Fish Flakes	100	23.9	1.3	1.9	2.1	0.72	0.91	1.20	0.24	1.3
Mackerel, Atlantic	106	19.3	1.0	1.4	1.6	0.54	0.68	1.00	0.17	1.0
Mackerel, Pacific	106	34.9	1.2	1.8	2.1	0.70	0.95	1.10	0.25	1.3
Salmon	113	21.9	1.1	1.6	1.7	0.68	0.81	0.98	0.20	1.2
Sardines, Oil	60	12.5	0.6	0.9	1.0	0.34	0.45	0.55	0.10	0.6
Sardines, Tomato Sauce	106	19.9	0.9	1.4	1.6	0.56	0.72	0.84	0.20	1.0
Shrimp	65	15.1	0.8	1.3	1.3	0.51	0.68	0.62	0.13	0.8
Tuna	100	25.8	1.2	1.9	2.1	0.72	0.96	1.10	0.23	1.3

[1] Adapted from Tables 1 and 2, "The Nutritive Value of Canned Foods II. Amino Acid Content of Fish and Meat Products" J. B. Neilands, R. J. Sirny, I. Sohljell, F. M. Strong, and C. A. Elvehjem, J. NUTRITION, *39*, 2, 187, 1949.
[2] Servings according to "Canned Food Tables" Home Economics Division, National Canners Association.

TABLE 3

Contribution by Canned Fish Servings to Protein and Amino Acid Requirements

Product	Protein Per cent R. D. A.[1]	Amino Acids Per cent R. D. I.[2]							
		Isoleucine	Leucine	Lysine	Methionine	Phenylalanine	Threonine	Tryptophan	Valine
Fish Flakes	34.1	93	86	131	33	41	120	48	93
Mackerel, Atlantic	27.6	71	64	100	25	31	100	34	63
Mackerel, Pacific	35.6	86	82	131	32	43	110	50	81
Salmon	31.3	78	73	106	31	37	98	40	75
Sardines, Oil	17.9	44	41	61	15	20	55	19	40
Sardines, Tomato Sauce	28.4	63	64	100	25	33	84	40	63
Shrimp	21.6	57	59	81	23	31	62	30	48
Tuna	36.8	86	86	131	33	44	110	46	81

[1] Recommended Daily Allowances (National Research Council; Food and Nutrition Board, 1948).
[2] Recommended Daily Intake (Rose, W. C., Proc. Fed. Soc. for Exp. Biol., *8*, 2, 546, 1949, "Amino Acid Requirements of Man").

reaching more than 100 per cent of the recommended daily intake. Three others (isoleucine, leucine, and valine) follow fairly closely, and the remaining three (methionine, phenylalanine, and tryptophan) run somewhat below 50 per cent but are still present in very substantial quantities. These values would be doubled if the charts were drawn to show the minimum requirements.

At this stage of consideration we are not attempting to evaluate the importance of these "essentials" on the basis of specific physiologic virtues. Future research may show that one or another of them is especially important to a particular bodily function, but at this time we should consider them as equally valuable and necessary to protein requirements.

In closing this paper I am going to quote the conclusion of Dr. McLester's article "Protein Comes Into Its Own":

"I should like to conclude with a question. The protein quota of the American soldier's ration in the second World War was liberal—more liberal than that of any other soldier in the world—not the 70 Gm. of today's recommended daily allowance, or the 100 Gm. of Lusk, or the 120 Gm. of Atwater—but 140 Gm., and he ate it all. Measured in terms of greater vigor, quicker and more assured recovery from injury and a higher degree of morale, did this liberality of protein allowance in the American soldier's ration contribute to the winning of the war? I believe it did."

There may be some who feel that Dr. McLester is over enthusiastic in his thinking regarding the results of good protein nutrition, but he has developed a very strong case for it. In closing, I submit to you that the combined nutrition story for fishery products which our Nutrition Program has developed is one that it would be hard to surpass. The fish canning industry now has a package of nutrition information, including data on minerals, vitamins, and proteins, which applies to all the important divisions of the industry. It is ready-made for use in educational promotion and advertising.

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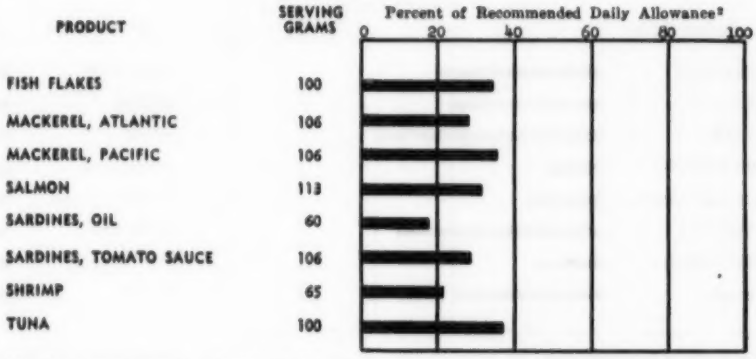
9. "The Nutritive Value of Canned Foods I. Amino Acid Content of Fish and Meat Products," M. S. Dunn, M. N. Camien, S. Eiduson, and R. B. Malin, *J. Nutr., 39*, 2, 177, 1949.

10. "The Nutritive Value of Canned Foods II. Amino Acid Content of Fish and Meat Products," J. B. Neilands, R. J. Sirny, I. Sohljell, F. M. Strong, and C. A. Elvehjem, *J. Nutr., 39*, 2, 187, 1949.

11. "Amino Acid Requirements of Man," W. C. Rose, *Fed. Proc. of Am. Soc. for Exp. Biology, 8*, 2, 546, 1949.

FIGURE I

Protein Contents of Average Size Servings of Canned Fish[1]

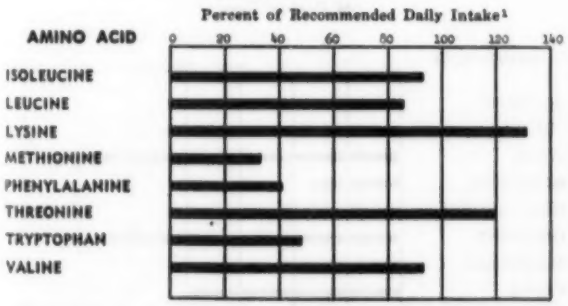


[1]Servings according to "Canned Food Tables," Home Economics Division, National Canners Association

[2]70 grams per day for adult man (National Research Council; Food and Nutrition Board, 1948)

FIGURE II

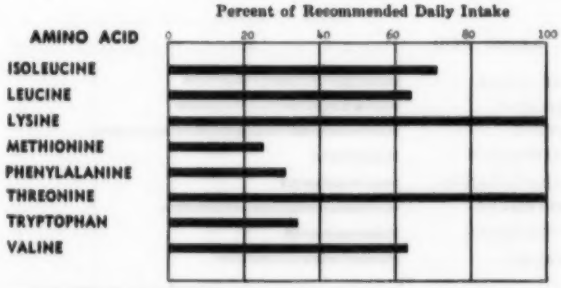
Amino Acid Contents of Average Size Servings of Canned Fish Flakes



[1]Rose, W. C., Proc. Fed. Soc. for Exp. Biol., *8*, 2, 546 (1949); "Amino Acid Requirements for Man"—Recommended daily intake values strictly tentative.

FIGURE III

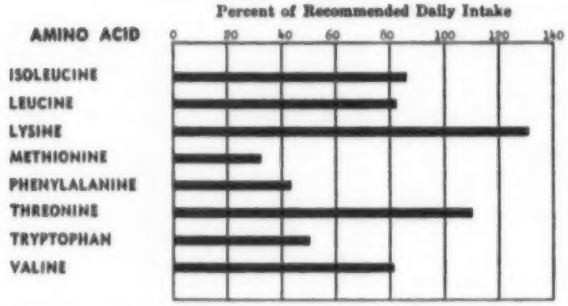
Amino Acid Contents of Average Size Servings of Canned Mackerel, Atlantic



Source: Same as FIGURE II.

FIGURE IV

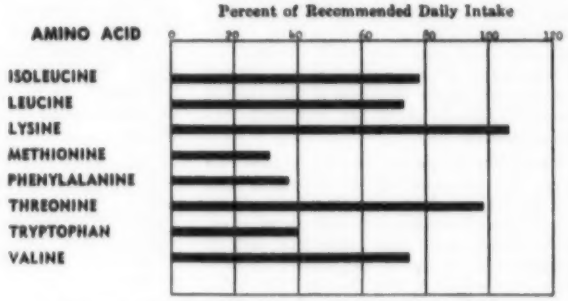
Amino Acid Contents of Average Size Servings of Canned Mackerel, Pacific



Source: Same as FIGURE II.

FIGURE V

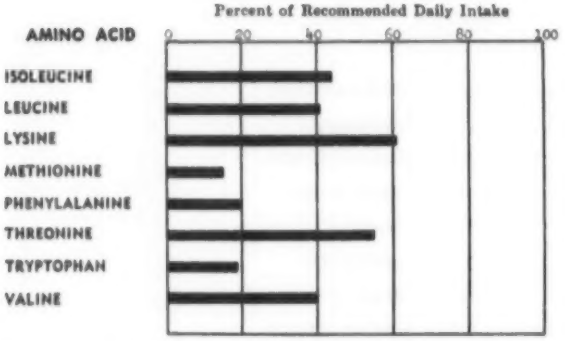
Amino Acid Contents of Average Size Servings of Canned Salmon



Source: Same as FIGURE II.

FIGURE VI

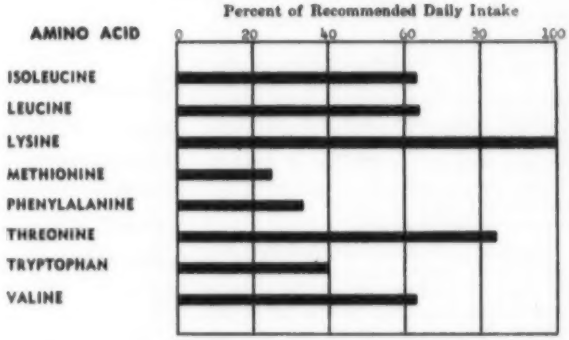
Amino Acid Contents of Average Size Servings of Canned Sardines, Oil



Source: Same as FIGURE II.

FIGURE VII

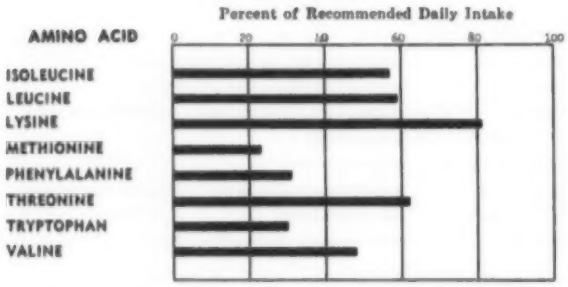
Amino Acid Contents of Average Size Servings of Canned Sardines, Tomato Sauce



Source: Same as FIGURE II.

FIGURE VIII

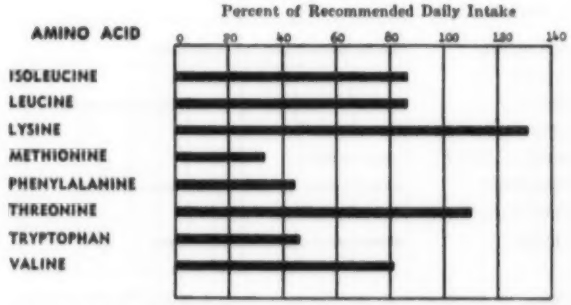
Amino Acid Contents of Average Size Servings of Canned Shrimp



Source: Same as FIGURE II.

FIGURE IX

Amino Acid Contents of Average Size Servings of Canned Tuna



Source: Same as FIGURE II.

SHOULD THE HOOVER COMMISSION'S FISHERY RECOMMENDATIONS BE ADOPTED?

By Robert O. Beatty, Conservation Director, Izaak Walton League of America, Inc.

I believe I should take just a moment, preceding my remarks on the vital question before us, to clarify for you just what the Izaak Walton League of America is. Although the name may connote otherwise, it is much more than a sport fisherman's club. The League is a broad-gauge organization of laymen, operating through 550 chapters and 19 state divisions in the United States and Alaska. The organization has as its principal objective the fostering of sound management, in the long-range public interest, of all renewable natural resources. Broadly speaking, the League concerns itself with promoting better management of, and disseminating to its membership and the public factual information about soil, forests, waters, fisheries and wildlife.

A large number of our members are held together by a common interest in fishing and hunting. A great many more — perhaps 25 per cent — have never gone afield with rod or gun and probably never will. We believe—we know—that good fishing and good hunting are but by-products of the proper use and husbandry of our basic natural resources, land and water.

As the fisheries of the nation, at one and the same time, are a vital recreational, economic and food resource to the people, they come well within our legitimate field of interest and have received a large share of our attention over the years.

The question before us today is broader and more basic than just that of whether the Hoover Commission recommendations on fisheries should be adopted. That something is wrong with the management of the nation's fishery resource, both sport and commercial, we all agree. The basic questions are: "What can we do about it?" and "What should we do about it?" By "we" I mean a sizable segment of the American public made up of assorted interests in the whole resource, most of them legitimate interests and some of them certainly in conflict.

The Hoover Commission, in its final reports to Congress on the Department of the Interior and the Department of Commerce, has proposed one solution. The Commission recommended that the commercial fishery activities and functions of the Fish and Wildlife Service, Department of Interior, be transferred to a Bureau of Commercial Fisheries in the Department of Commerce. Enabling legislation which would, among others, translate this recommendation into fact was introduced in the Senate on January 11, 1950, by Senator Cain of Washington. That's Senate Bill 2833.

As far as we can gather from the assorted Commission reports, the chief reason given for this suggested transfer is:

> "A bureau of fisheries can be one of the most important industrial and commercial agencies in the government. It is related to industry, to commerce, and to the merchant marine at many points."

In our opinion the recommendation completely ignores three basic facts: (1) (and this is pointed out by a dissenting opinion of four of the 12 commissioners) that the chief problem is one of how to achieve better management, exploration and development of the fisheries as a natural resource, rather than how better to exploit the fishery commercially as a dollar resource; (2) that the dollar value of the recreational fishery is exceedingly important and, in fact, closely approaches that of the commercial fishery; and (3) the commercial and sport fisheries are closely interdependent in the natural environment.

I'd like to discuss my reasons for those two statements in a little more detail, but in so doing want to make it perfectly clear that it is not my hope, nor my intention in any way to widen further the breach in points of view between commercial and sport fishing interests.

Such a breach apparently exists in some places in spite of honest and sincere efforts by many parties to close it. By the very nature of any natural resource, which is subject first to the laws of nature, and second to man-made laws, nothing will be gained by either group in the long run taking a "stand-off-and-let's-fight-it-out" attitude. Much can be gained, however, if both parties will stand to one side together and try to look at the total fishery as a vital present and future natural resource. That is what I am trying to do here.

We concur that the commercial fishery resource needs considerably more and careful attention and development, but it needs these things along two lines: (1) in the field of marketing and manufacture; and (2) in its management as a renewable natural resource. We know all too little about what makes for "sustained-yield" populations of commercially-valuable fish species. There is only one example of a fishery resource that has been successfully studied and conserved over most of its range; that is the Pacific halibut administered by the International Fisheries Commission since 1930. This is the only fishery agency that has, to date, come even close to being adequately supported with money and personnel.

Far too little is known of the life habits, cyclic influences and other factors affecting the abundance or scarcity of fishes, especially with regard to salt water species.

There is ample testimony available to show that an important reason for the decline of many commercially valuable species has been over-exploitation over the years—taking too many fish of too small a size the year around without regard to spawning seasons, migration habits, etc. Placing the management and administration of the commercial fishery back in the Department of Commerce, whose chief function is the development of industry for economic reasons, would, it seems to me, be inviting more of the same, and would be a dangerous and false solution to the problem.

I do not think I am being idealistic about the practical economic problems facing the industry when I say that. I believe, in fact, that I am being quite hard-headed, for I am thinking about what the economic status of the fishery will be 10 or 20 years from now. Nobody profits if there are no fish and we are rapidly approaching the "no fish" stage, for practical purposes, with many commercially-valuable species in more than one area.

The second basic fact which the Hoover Commission report on Interior ignores in its recommendation is the close interdependence between sport and commercial fisheries, plus the great economic value of the sport fishery itself.

The same basic problems of lack of adequate research, personnel and management which plague the commercial fishery also plague the sport fishery. The latter is by no means picayune from an economic standpoint, yet under the Hoover Commission recommendations receives bare lip-service recognition.

Let me show you, in dollars and cents, what status sport fishing has as big business in this country. For the year ending June 30, 1949, 15,478,570 American citizens bought angling licenses. Most of these are fresh water anglers, as only one state I know of, California, requires a license for salt water sport fishing. Conservative estimates place at an additional 5,000,000 the anglers who fish coastal and off-shore waters from Maine to Texas and from Washington to southern California.

In 1944 the Fish and Wildlife Service, as a part of its river basin work, began studies to determine the amounts of money fishermen and hunters spend in pursuit of their respective sports. They determine that the average annual outlay for fishing tackle, which represents but 5 per cent of the fisherman's total expenditure in pursuit of his sport, was $6.25 per person. Even if we ignore the estimated 5,000,000 non-license buy-

ing anglers, that amounts to $99,740,000 annually for tackle alone. The other 95 per cent includes what anglers spend for transportation, clothing, meals and lodging and miscellaneous items of equipment including $32,657,940 annually for licenses. It makes a total of $1,995,000,000 spent annually by fishermen in pursuit of game fish. Bear in mind that these are 1944 cost figures applied to 1949 angler numbers. As such, the total undoubtedly is quite conservative.

In Colorado, the National Opinion Research Center made a survey of thousands of resident anglers and hunters on what they spent to pursue their sport in 1946. Among other things, they found that warm water fishermen spent an average of $47.80 each and trout fishermen, $76.22. The number of resident fishing licenses sold in Colorado last year was 257,925, of which number, it is safe to say that four out of five were trout fishermen. The money placed in circulation by Colorado's resident anglers last year amounted to upwards of $18,192,000.

Colorado's tourists were estimated by official state sources to have spent $216,000,000 in the state in 1949. It has been calculated by the same sources that sport or family food fishing is the major attraction for approximately 35 percent of the visitors. They generally spend at a considerably higher rate, per capita, than the residents—based on the above figures, about $75,500,000 annually. Added to the amount spent by resident anglers, that's upwards of $93,500,000 spent for sport fishing in just one state.

Colorado is fairly representative of most of the 11 western states with the exception of California which had a considerably larger number of license buying fishermen—1,030,617.

These figures are not just pulled out of thin air. They are based on just as careful statistical surveys, interviews, and inventories as are used in business. As a matter of fact it is business, big business!

The economic value of the sport fishery, therefore, and the number of persons in industries employed directly and indirectly in meeting the sport fishermen's needs in the tackle, boat, railroad, airline, auto, gasoline, restaurant and resort businesses, compares quite favorably with the 1947 estimated consumer value of commercial fishery products, of $1,000,000,000 which furnished employment directly and indirectly for some 525,000 persons. These figures are taken from a report on the commercial fisheries to the Natural Resources Task Force by a technical consultant representing the industry.

The other fact to remember has been well stated in the report of the Task Force on Natural Resources: "Sport fishing is becoming increasingly dependent on commercial fishery resources." But one example of this is the increasing numbers of fish species which are sought after by both the commercial and the recreational angler. Here are but a few: In fresh water—the salmons, yellow perch, wall-eye or yellow pike, smelt, catfish and bullheads, sheepshead, paddlefish, buffalo, red horse, white bass, crappie, northern pike and pickerel, hickory shad; In salt water—amberjack, tuna, barracuda, bluefish, bonito, cod, haddock, halibut, mackerel, sea trout, croaker, shad, porgy, sea bass, striped bass, and many others. The basic biological research and controls needed to better manage many of these species would be of lasting benefit to both commercial and sport fishing interests.

But the Hoover Commission would separate the management of commercial and sport fisheries. Certainly the management of sport fisheries does not belong in the Department of Commerce. Even if we could honestly agree that commercial fisheries did, we would not support such a move on the basis of its demonstrated interdependence with the nation's sport fisheries.

I have probably taken too much time on this one question but it seems the principal problem before us and one difficult to cover adequately in a short time.

The other two recommendations we should briefly consider are those of the Task Force on Natural Resources and the minority report on the Department of the Interior signed by Acheson, Pollock and Rowe. Both of these recommend a Department of Natural Resources with cabinet status. As you know, they differ with respect to treatment of the fisheries.

The Task Force recommends that fishery functions and wildlife functions be split, in a proposed Department of Natural Resources, into a Fisheries Service and a Wildlife Service. The minority recommendations appended to the Hoover Commission report on Interior opposes this split for lack of adequate definitive study to show the need for it.

There is another basic difference between the two reports which I want to call to your attention. The Task Force report has no status before Congress today. It has served its function. As a document it is today proud but poor—proud, as perhaps the best blueprint yet drawn for the sound management of the nation's publicly owned and publicly controllable natural resources; poor—as a document which will begin to gather dust on the shelves unless the people decree otherwise. The minority report, on the other hand, does have status as part of an active document presented to Congress for translation into legislation.

The question is: "Split 'em or not split 'em?" In my opinion, the only things we are splitting by devoting a lot of time and worry to that question are hairs.

The Task Force gave a few, not too specifically documented reasons for splitting. The minority disenters said, "That's not proof enough." As far as we in the Izaak Walton League are concerned, based upon the evidence we have seen on both sides, it is a question needing further specific study and proof one way or the other. In its arguments for a split between Wildlife and Fisheries, the Task Force gives some excellent additional reasons for not separating commercial from sport fisheries.

From the standpoint of the long-range good of the total fishery resource and its subsequent benefit to the people, the question of separating it from wildlife hinges, I think, on whether we would have a Fisheries Service and a Wildlife Service operating together in a Department of Natural Resources or whether we would have a Fisheries Service in Commerce or public works and a Wildlife Service in Interior or Agriculture or—god knows!—maybe the Army Engineer Corps!

This much we do know today: The Department of Natural Resources idea, without the split, is before Congress. As an organization, the Izaak Walton League has gone on record in favor of such a Department. It has not yet been demonstrated conclusively to us that a split between fishery and wildlife functions is either necessary or desirable. On the other hand, the beginnings of a good argument for a split have been started and have demonstrated that the commercial fishing industry, as well as the sport fishing industry, is in crying need of better administration, financing and management. We would, however, support legislation for a Department of Natural Resources regardlessly of whether fisheries and wildlife were separated.

That's a good safe middle-of-the-road course on a burning issue perhaps. But we do not take it through any desire to avoid an issue. Those of you who are acquainted with the work of the Izaak Walton League know that, I am sure. We take it rather because we are trying to view the over-all natural resource picture of which fish and wildlife are just a part—albeit an important one.

We do not speak for all the organized groups of sport fishermen in the country by any means. But this you can be sure of: We will fight until the last goose is hung for what we believe to be the best plan for the wise use and husbandry of all the nation's resources. In this particular case the Department of Natural Resources transcends in importance the question of whether fisheries and terrestrial wildlife should be managed together or separately. We would not bicker over the question to the detriment of whatever chance such a department might have.

That some better set-up for administration of commercial and sport fish-

eries is needed, we agree. Frankly, we don't know the answer. We do not set ourselves up as experts in administrative matters. We do believe strongly, however, that the administrative and management changes in the fisheries as currently proposed by the Hoover Commission and as outlined in S. 2833 would work to the ultimate detriment of the fishery resources of the nation.

You have heard, or will hear ample testimony today in favor of the split, and you have heard, or will hear, ample testimony opposed to it. The thing we must all do is remember that we are considering first and foremost the long-range welfare of a vital renewable resource which in all its aspects provides revenue, food and the increasingly important health and well-being through recreation, for a sizable segment of our population. Let us first determine how we can surely perpetuate that resource, and secondly how best to use it to the benefit of all concerned.

SHOULD THE HOOVER COMMISSION'S FISHERY RECOMMENDATIONS BE ADOPTED?

By Albert M. Day, Director, Fish and Wildlife Service, U. S. Department of Interior

It is hardly proper for me as Director of the Fish and Wildlife Service, one of the agencies that is proposed for reorganization by the Hoover Commision, to discuss whether that Commission's recommendations are sound and should be adopted. Rather, I prefer to make some general observations about the background of the Hoover Commission report on this particular subject and explain what the Fish and Wildlife Service is attempting to do to aid in the broad development and utilization of the highly important fishery resources of this nation.

In the first instance, it should be well understood that the final recommendations of the Hoover Commission resulted only after a great deal of conflicting and diverse testimony on this important subject had been given careful consideration. The whole problem is complex because fishery management is complex. It must always be woven into the intricate patterns of land and water uses and human needs in our expanding civilization. This fact is well emphasized when we recognize that the three different task forces studying the organization of the government came out with three different recommendations when it came to fish and wildlife matters.

The report of one committee would have dispersed the conservation agencies through the government and would have put the Fish and Wildlife Service in a Public Works Department. The Agricultural Committee recommended a transfer to Agriculture of all major public land administration activities and functions including the Fish and Wildlife Service. The task force on Natural Resources proposed to abolish the Interior Department and create in its place a Department of Natural Resources, in which would have been a division of the present Fish and Wildlife Service into a Fisheries Service and a Wildlife Service, each separately administered. The final recommendations of the entire Commission were that only the commercial fisheries activities of the Service should be transferred to the Department of Commerce. As evidence of the diversity of opinion among the members of the Commission, it should be noted that dissents to this proposal were expressed by Vice-Chairman Dean Acheson and Commissioners James Forrestal, James K. Pollack, and James H. Rowe, Jr.

With this divergence of opinion among the members of the Hoover Commission and the various task forces as to the proper place in government for the federal responsibility for fishery activities, it is not surprising that the resultant reactions of the public also have been mixed. The American Fisheries Society, organized in 1872 and now the oldest scientific biological organization in the United States, at a meeting in Winnipeg, Canada, last September, passed a resolution endorsing the task force recommendations of the Report on Natural Resources, with the exception that the Society opposed that portion of the report which recommends the separation of fisheries administration from wildlife administration.

Likewise, a meeting of the International Association of Game, Fish and Conservation Commissioners, also meeting in Winnipeg, in September, passed a resolution endorsing the general purposes of the Natural Resources task force report, but also stated that they opposed the recommendation of the report which would separate fisheries from wildlife in the present Fish and Wildlife Service. Within the past few weeks, the executive officers and the legislative committee of the International Association again reaffirmed to Secretary Chapman their strong opposition to this proposal. The International Association is made up of representatives of all of the state conservation departments in the country, the great bulk of which administer both fisheries and wildlife in a single organization of the state. In fact, of the 48 states only eight have separate departments devoted to commercial fisheries. In the other 40, commercial and sport fishery and wildlife management activities are all in the same department. The same, of course, is true in Alaska.

To the contrary, the Pacific Fisheries Conference, composed largely of members of industry operating on the West Coast and in Alaska, by action taken at a recent meeting in California, adopted the following resolution, and I quote:

"Whereas, the consolidation by Executive Order of the former Bureau of Fisheries and the former Bureau of Biological Survey into one Bureau in the Department of the Interior, called the Fish and Wildlife Service, has been demonstrated as unsound, illogical and ineffective, and has not served to further the sound, efficient administration of fisheries, and whereas the Commision for the Reorganization of the Executive Branch of the Government, commonly referred to as the Hoover Commission, recommended that the administration of fisheries should be separated from the administration of wildlife: Now, Therefore,

"Be it resolved, that the Conference heartily endorses the recommendation that such separation should be made and also urges that the re-established Division of Fisheries should be transferred in toto to the Department of Commerce or to a new Department of Natural Resources if such a Department should be created and now, in whichever Department placed, fisheries should be under direct charge of an officer of the rank of Assistant Secretary."

It is to the assertion of the Pacific Fisheries Conference that the present organization has been demonstrated as "unsound, illogical, ineffective, and has not served to further the sound, efficient administration of fisheries" that I wish to direct my remarks today. I challenge that statement as incorrect and I call upon the drafters of the resolution to furnish proof of their assertions. The present organization is sound, it is logical, and it is effective. In the 10 years it has been in effect, it has done more to further the interests of fishery management, conservation, and utilization than was accomplished in the three or four decades previously.

Memories about public affairs and previous events are short, and I feel that the drafters of the resolution that I have just mentioned must have been unfamiliar with the background and did not know the original reasons for the consolidation of the Bureau of Fisheries and the Bureau of Biological Survey. Such moves are soldem made without good reasons, as was the case in this instance. At the time of the merger in 1940, both of these predecessor agencies were weak and to a considerable extent were discredited in the public mind. The Biological Survey, which I joined in 1918 and in

which, together with the present Fish and Wildlife Service, I have served continuously ever since, had suffered from weak administration for several years prior to the merger. Waterfowl, coming under federal regulation under a treaty with Canada, had been consistently declining over a period of years. The only remedy that the Bureau seemed to be able to prescribe was ever-shortened seasons and ever-smaller bag limits. Because of resultant public dissatisfaction and clamor, President Roosevelt appointed a special committee of citizens to study the problem and to recommend remedies. "Ding" Darling, the famous cartoonist, prominent in conservation circles in the Midwest, served on this special study committee. It recommended a positive action program—the acquisition and restoration of marshes along with severe restrictions on the take by hunters. Darling was induced to serve as Chief of the Biological Survey, an organization that had been virtually leaderless since the disability retirement of the previous bureau chief. He remained less than two years and was succeeded by Dr. Ira N. Gabrielson, an outstanding scientist and able administrator, but in 1940, when the merger came about, the public had not yet regained confidence in the efficiency of the administration of the Biological Survey.

A similar situation existed in the Bureau of Fisheries. It was a small organization and the morale of its employees, as well as the confidence of the public, suffered severely because of the quality of its leadership. Controversy raged, particularly in the Alaska fisheries field, where the bureau then had and still has as the Fish and Wildlife Service sole regulatory authority over the extremely valuable salmon and herring fisheries. We are still trying to live down some of the things that happened in Alaska in those days.

Government reorganizers concluded that there might be a strengthening of the administration of both fisheries and wildlife programs if the two closely related small bureaus were merged into one larger group. This has been the trend of government for many years and, with the exception of the recommendations for the transfer of the commercial fishery activities to the Department of Commerce, was also the philosophy of the Hoover Commission.

When the merger of the Biological Survey and the Bureau of Fisheries came about in 1940, the Biological Survey was on its way back into public esteem under the leadership of Dr. Gabrielson. It was, therefore, logical that he should become the first Director of the new Fish and Wildlife Service. As a minor employee in Washington at the time of this "shotgun wedding" of the two Bureaus, with Secretary Ickes, incidentally, holding the old double-barreled gun on us, I can personally testify that it was an unpopular move with the employees of both Bureaus, particularly those who revere tradition and the "good old days" of the past. I also know that the proposal to return to those "good old days" does not fall upon completely unsympathetic ears with some in the present organization. It is difficult to understand their philosophy, because I cannot think of a single individual who has not personally benefitted in rank and salary by the creation of a larger and more important agency. With some, tradition is truly a potent factor.

But, of more importance to you and the other people we are paid to serve, did the mandatory trip to the altar pay off? Let us merely check the records.

First, let's review the appropriations for fishery work for the past 20 years—the 10 years of operations under the present system and the 10 years immediately preceding. Granted that during recent years the costs of operations have risen and appropriations have been more liberal to take care of these factors, appropriation figures are probably still the best over-all yardstick to measure the services the government gives its citizens in matters pertaining to the fisheries.

In 1930, Federal fishery appropriations amounted to $2,498,550; in 1940, $2,421,075. That represents a decrease during the 10-year period of almost $100,000. The average for that period was approximately $2,000,000 per year. The fishery appropriations for the fiscal year 1950 amount to $10,875,251. Of even greater significance, the Budget which the President sent to the Congress within recent days and which Fish and Wildlife Service representatives justified before the Appropriation Committees a week ago carry proposed appropriations for fishery items amounting to approximately $12,000,000 for the fiscal year beginning next July 1. To be more specific as to items in which you are most interested, the work of the Branch of Commercial Fisheries received $229,540 in 1940; $668,500 in 1950. The Branch of Fishery Biology received $390,835 in 1940 as compared with $1,546,000 in 1950; Alaska Fisheries, including the Pribilofs, from $516,460 to $1,480,100 in those 10 years. And the wildlife appropriations have likewise increased at the same time. In 1940, they amounted to $6,149,343, almost three times the then appropriated sums for fishery activities. For 1950, they amounted to $16,502,049. This sum included Duck Stamp and Pittman-Robertson revenues. Not bad for an "unsound, illogical and ineffective" organization!

At the time of the merger, not a single research or exploratory vessel was owned and operated by the Bureau of Fisheries. Now, the *Albatross III* is carrying on investigations extending from the Grand Banks to the Carolinas on the Atlantic Coast. Within recent months, two vessels, the *Oregon* and *Alaska*, have been acquired through special legislation and appropriations and are now stationed in the Gulf of Mexico. One will do exploratory fishing and the other will do biological research. A new vessel, the *John N. Cobb*, was commissioned at Astoria, Ore., this month to carry out exploratory and experimental fishing in the North Pacific, reaching far into Arctic waters. The *Black Douglas* is carrying on experimental and biological work in an effort to find answers to some of the perplexing problems surrounding the pilchard fishery off the coast of California and lower Mexico. The *Hugh M. Smith* is conducting biological and oceanographic research, while the *Henry O'Malley* and the *John R. Manning* are doing exploratory fishing in the waters of the South Pacific in a program that has been developed in close cooperation with the tuna fishing industry of the West Coast. The *Spencer F. Baird*, the *Theodore N. Gill*, and the *David Starr Jordan*, three well-equipped research and exploratory vessels, are now completing a five-year study of the South Pacific fisheries in connection with the rehabilitation of the Philippines. It is planned that the *Theodore N. Gill* will soon be stationed in the Great Lakes to undertake the difficult study of the decline in that great fishery, made possible by special legislation and appropriations passed during the present session of Congress. That adds up to nine large vessels compared with not a single one at the time of the merger. In the entire previous history of the Bureau of Fisheries, reaching back to 1871, in fact, there were never at one time more than three ships doing that sort of work and that occurred for only two years. None had been in service since 1932—eight years before the merger. Does that add up to the assertion that the present Fish and Wildlife Service is an "unsound, illogical and ineffective" organization?

Ten years ago, the famous laboratory at Woods Hole, steeped in traditions of fishery research and oceanography since the days of Spencer Fullerton Baird, had been virtually abandoned. Within the past two years, we have rehabilitated the station, have transferred the scientific staff of the New England area there for headquarters, and the *Albatross III* is now berthed at Woods Hole. The laboratory at Beaufort, N. C., is being reconditioned and important studies in cooperation with the Atomic Energy Commission are being conducted at that point. A new laboratory is being constructed in Hawaii and the technology lab at Ketchikan, Alaska, has within recent months been enlarged and expanded. During that decade, a small laboratory was constructed in Puerto Rico, and fisheries research in the Caribbean area was

carried on. In addition, the research stations at College Park, Md.; Milford, Conn.; Seattle, Wash.; and Pensacola, Fla., have been expanded.

Never in the 80 years of government participation in matters pertaining to the fisheries has there been such great activity in the international field as there has been during the past few years. That is perfectly logical because of the increasing influence of the United States in world affairs. I should like to cite some of the more recent developments, however, as proof that fishery matters are not suffering at the hands of the present organization.

The Northwest Atlantic Fisheries Convention concluded just a year ago and ratified by the President last September 1 brings 11 nations having common interests in the North Atlantic fishing grounds under treaty arrangements for the first time in history. The fisheries of this great area have been the battleground for some exceedingly tough international problems that date back to days prior to American independence. A Convention between the United States and Mexico for the establishment of an International Commission for the Scientific Investigation of Tuna was signed at Mexico City in January, 1949, and has been ratified by the President. A similar Convention between the United States and Costa Rica for the establishment of the Inter-American Tropical Tuna Commission was signed at Washington in May, 1949, and was ratified by the President on September 1, 1949. Three years ago, 22 nations, including Canada and the United States, met in Washington and arrived at an international agreement which established the International Whaling Commission, empowered to conduct investigations and regulate whaling throughout all the marine waters of the globe. In 1946, a treaty was negotiated with Canada for the protection and management of the Great Lakes fisheries. This, so far, has been the least effective of the treaty programs because of opposition of one or two states surrounding the Great Lakes.

I have mentioned some of the more recent developments but I should record also the continuing activities in connection with the Sockeye Salmon Commission which came into being in 1936, and which has now assumed regulatory powers after the first 10 years of investigation. This has included the construction of the $2,000,000 fishway at Hells Gate on the Fraser River. I serve as one of the American members of this Commission. Assistant Director James is a member of the Halibut Commission, established in 1937, which has done a remarkable job of restoring the stocks of halibut along the stretches of the North Pacific Coast.

In the field of management of the fisheries of Alaska, I am proud of the progress that is being made. For the first time in history, we are now developing a closely integrated program, using all available manpower and equipment for enforcing both the fishery and wildlife laws and regulations in a joint operation. Enforcement of the fishery regulations is now vastly improved because of the use of Alaska game agents as well as about a dozen transferred from the states each season. During the war years the fishing regulations were probably more liberal than they should have been. This was due to the pressure for food for our own people and our allies. Many of our trained personnel were in the Army and Navy and many Service ships were devoted to military uses. Inadequate observations and patrol, together with over-fishing, created a serious depletion in the Alaska fishery. I am happy to say that it looks as though the situation is improving rapidly. Following severe restrictions during the past three years, the Southeastern Alaska pack of pink salmon responded to the point where the pack last year not only returned to but also exceeded the previous normal 20-year average. Two large vessels have recently been secured by transfer from the Navy to augment our Alaskan fleet, and several smaller ships have been built as a result of new appropriations by the Congress. In the Service's combined Alaskan operations, there are now owned and operated 18 vessels ranging from 40 feet to 150 feet in size, with 11 additional patrol vessels ranging from 30 to 40 feet. There are also about 100 speed boats used in fishery patrol. Surplus planes have been made available since the end of the war and we now have a very excellent fleet of 20 planes which services both fishery and game agents in the Territory. Congress, last year, appropriated $250,000 for a new airplane hangar and shop at Anchorage, and as a result our facilities for observation and patrol will be much improved in future years. Moreover, Alaska regulations are now being made and enforced without fear or favor.

Ten years ago there were no effective means of correlating the needs of fish and wildlife with the construction programs of the Army Engineers and the Bureau of Reclamation. That is not the case today. The Fish and Wildlife Service maintains a River Basin staff whose responsibility it is to review the plans of the construction agencies while the projects are in the making. We work in close coordination with these two bureaus. Much has been done to protect and increase the fishery potentials in the reservoirs because of this service.

The relations of the Fish and Wildlife Service with the Congress and the Bureau of the Budget are excellent. The needs of both fisheries and wildlife are given sympathetic attention both as to appropriations and as to legislation. This, in my opinion, is due in large part to the fact that practically every member of the Congress has a personal interest in something that the Fish and Wildlife Service is doing. If he or his constituents are not particularly interested in the commercial fisheries, it is a pretty safe bet that he either likes to hunt ducks and geese or he enjoys fishing for trout or bass or blue-gills. Maybe he comes from the West and is more interested in the coyote and ground squirrel control program of the Service, or perhaps he wants to go to Alaska to hunt moose or brown bear. It is an assured certainty that if there is a federal fish hatchery in his district, he is anxious to see that it produces as many fish for his sportsmen constituents as can possibly be done. I doubt that there is another single agency of government that has such wide interest for so many people as do the varied activities of the Fish and Wildlife Service.

Last year there were 13,500,000 people who bought fishing licenses and almost 13,000,000 who bought hunting licenses. Another 2,000,000 bought duck stamps to hunt ducks and geese. Many probably purchased all three kinds of licenses, but yet the fact remains that approximately one out of every five people in the United States is influenced in some degree by the activities of this Service. As such, the single organization known as the Fish and Wildlife Service wields much more power and influence than either the Bureau of Fisheries or the Biological Survey ever did before or would ever do again, if they were reconstituted separately.

I could continue this recitation all day, but I fear that I have already used my allotted time. I shall close by inviting the members of the Resolutions Committee of the Pacific Fisheries Conference, or anyone else for that matter, who believes that the "consolidation by Executive Order of the former Bureau of Fisheries and the former Bureau of Biological Survey into one Bureau in the Department of the Interior, called the Fish and Wildlife Service, has been demonstrated as unsound, illogical, and ineffective" to take a little more careful look at the record. I sincerely believe that if those members of industry who are not satisfied with the present accomplishments of the Fish and Wildlife Service would tell us and the Congress, frankly, what in the way of accomplishments they want but are not now getting, they will come closer to seeing it done than if they were to depend upon a much smaller agency, with much less prestige. Remember the appropriation figures I gave you—$2,421,075 in 1940 as compared with $10,875,251 in 1950, and approximately $12,000,000 which President Truman has recommended to the Congress for next fiscal year. Again, I say, study the record.

SHOULD THE HOOVER COMMISSION'S FISHERY RECOMMENDATIONS BE ADOPTED?

By C. R. Gutermuth, Vice President, Wildlife Management Institute, Washington, D. C.

It is a distinct pleasure to attend this large gathering of food processors and to participate in this panel discussion on natural resources. Heretofore, my contacts with your industry, other than that of a consumer, have been limited almost entirely to fighting with some of your contemporaries about stream pollution abatement.

Much has been said and done in recent years to encourage better land use throughout the nation, but it took a critical water shortage in one of the largest population centers in the world to focus public attention on the importance of water and upon the seriousness of stream pollution. New Yorkers ultimately may be able to use heavily-chlorinated water from the upper Hudson for drinking purposes, but they have to use toothpicks after each drink for a while until they get those upstream industrial and municipal wastes out of that badly polluted river which flows past their door. Today, on Times Square, you can hear, "Water, water, everywhere, but not a drop to drink."

Those so-called "sentimentalists," the conservationists of the country, have been pleading for consideration for a third of a century or more, and when it gets so bad that prosperous Wall Street brokers can't shave on Fridays, then things begin to happen. President Truman appointed a temporary Water Resources Policy Commission but it is questionable if that recently-created body will make any new or different recommendations.

All of us must be concerned with the wise use of natural resources. There can be no other choice since health, wealth, and security stem from nature's bountiful gifts which form the basis of all commerce and industry. Agricultural production may be high now with hybrid corn, more potent fertilizers and everything, but how long can science continue to compensate for those deficiencies resulting from improper use?

Freedom, continuing prosperity, and everlasting enjoyment of the high standards of the American way of life depend upon the sound management of our shrinking resources, which for generations have been regarded as inexhaustible.

The time has come in this modern age when critical decisions must be made. We must adopt a well-defined and efficient pattern of land and water use on this continent to avert a crisis. There may be objectionable features to the Hoover Report, but they recognized the problems and called attention to the imperative need for action.

The Hoover Commission, after a long study of federal government activities, made the following recommendations that would have a pronounced effect on the administration and utilization of natural resources. The Commission would retain the Department of the Interior but would make that agency more of a water-development and mineral-management service. To accomplish that objective, the Commission suggests a construction agency in Interior created largely by combining the present activities of the Bureau of Reclamation and Army Corps of Engineers, together with the construction functions now assigned to other agencies.

Briefly, the recommendations are as follows, it being understood that the present bureaus in Interior would remain there unless otherwise indicated.

1. The Department of the Interior should be given clear major responsibility for governmental development of the nation's water and mineral resources. Since those activities require large public works, other major public works also should be managed by this Department.

2. To these ends, the Interior Department should take over the flood-control and rivers and harbors work of the Army Engineers, plus Public Building Construction and Community Services from the Federal Works Agency. It also should manage certain other major construction on assignment from other governmental agencies.

3. The following agencies should be shifted from Interior to other Departments: (a) Bureau of Indian Affairs to a new Department; (b) Bureau of Land Management (except minerals) to the Department of Agriculture; (c) Division of Commercial Fisheries to the Department of Commerce.

4. A Board of Impartial Analysis for Engineering and Architectural Projects should be created in the President's office, consisting of five members of outstanding abilities appointed by the President. It would review and report on the economic, social, and technical worth of all projects proposed by the Interior Department. It also would review authorized projects periodically and advise as to their progress or discontinuance. Although the Hoover Commission tactfully refrains from mentioning it, such a Board, with sufficient prestige, might materially diminish Congressional logrolling and pork-barrel grabs.

The Hoover Commission, it its final recommendations affecting conservation agencies, did not follow the reports of any of the task forces which made extensive proposals regarding renewable natural resources. The report by one committee would have scattered the conservation agencies through the government and would have put the Fish and Wildlife Service in a Public Works Department. The Agricultural Committee recommended a drastic reorganization of the Department of Agriculture and included a transfer to Agriculture of all major public-land administration activities and functions. The task force on Natural Resources developed an even bolder and more far-reaching program. It would abolish the Interior Department and create in its place a Department of Natural Resources, consisting of a consolidated water-development service to administer the present functions of the Bureau of Reclamation, the river-development functions of the Corps of Engineers, and numerous related activities of other governmental agencies and departments. It recommended the division of the Fish and Wildlife Service into two units, a Fisheries Service and a Wildlife Service.

The minority report, by Vice Chairman Acheson did not disagree too much with the task force on Natural Resources. The minority did disapprove of the separation of the Fish and Wildlife Service but recommended:

1. A Department of Natural Resources consisting of a Water Development Service, (including the Bureau of Reclamation and river-development functions of the Corps of Engineers,) a Forest and Range Service, Geological Survey, Bureau of Mines, National Park Service, and Fish and Wildlife Service. The Department of the Interior would cease to exist.

2. The consolidated Forest and Range Service would be based on the present Forest Service and furthering its general policies, but including the functions of the Bureau of Land Management, now in Interior, and research functions of the Agriculture Department relating to forest insects and diseases.

3. Retention of the Tennessee Valley Authority in its present form but the establishment in the President's office of a Board of Review which would coordinate the programs of the Department of Natural Resources and those of the new regional authorities, if any, with each other and with such governmental agencies as Agriculture and the National Military Establishment.

Although the Commission steered a somewhat midway course among the committee recommendations, the final report included the feature of consolidating all water services in Interior, but retained the Department of the Interior as presently constituted, except that the Bureau of In-

dian Affairs, the Bureau of Land Management, and the Division of Commercial Fisheries, one unit of the present Fish and Wildlife Service, would be shifted out of the Department.

Needless to say, there are differences of opinion over the recommendations which should receive support. Those conservation organizations interested primarily in forests tend to support the recommendation of the transfer of public lands administration to Agriculture which would leave Forestry in Agriculture where it has been for many years and where it has fought vigorously to stay. The Agricultural task force based its recommendation on the premise that trees and grass are crops. It argued that research, management, and conservation of all crops might well be concentrated in one organization. It recommended a drastic regrouping of present functions and assignments which would cause most of the present agencies in the Agriculture Department to disappear or be divided and distributed between regulatory services, conservation services, extension services, research services, and others.

Regardless of the name by which the Department would be known, it seems that the recommendations in the minority report, with minor exceptions, offer the soundest conservation program. Ignoring the perennial contest between Interior and Agriculture, this report urges the placing of the water-development services and public land-management agencies under one head. This approaches closely the idea of a Department of Conservation that has been advocated by many conservationists for several years.

Perhaps the one point that will be raised most frequently will be to question the advisability of combining all water services into one huge unit and then placing fish and wildlife, national parks and other relatively small but exceedingly important units in direct competition with the large division. Some will feel that this might intensify the disadvantage under which small bureaus operate in Interior now when their need for funds or their programs conflict with proposals of the Reclamation Service. Nevertheless, if a coordination and review board were established in the Office of the President simultaneously with such consolidation, perhaps there would be some check on the apparently endless ambitions of government-paid engineers to make over the entire face of America in the shortest time possible.

The one inconsistency that stands out in a review of the Commission's recommendations is the one which would divide the Fish and Wildlife Service into two units, a Fisheries Service and a Wildlife Service. With this single exception, the Hoover Report recommends consolidation and closer coordination. Only in this instance does the Commission recommend the division of one small unit into smaller units. In my judgment, it would be a serious mistake to follow this suggestion. This would divide the present Fish and Wildlife Service, which is small now compared to many government bureaus, into still smaller units which might make it even more difficult to deal successfully with large issues. Furthermore, I can find no logic in the recommendation.

In many states, the same agency is handling the administration of both resources. The basic biological problems are largely the same, differing only in details rather than fundamentals. The only argument advanced in favor of this recommendation is the understandable one of tradition. The Biological Survey and the Bureau of Fisheries were operated separtely for many years and some of the present members of the Fish and Wildlife Service can remember this condition. Perhaps they hope to restore it.

Prior to the consolidation, Dr. Gabrielson, who served as Director of the Service for many years, opposed the plan largely because he already had plenty of troubles in the administration of wildlife work. Gabrielson, who is president of the organization that I represent, now admits that most of his fears proved groundless and that from an administrative standpoint, there were good reasons for the merger. The obvious advantage to both groups has been that of presenting a united front. Both lines of work have secured increased appropriations. They have had additional money to more adequately perform their responsibilities, and more than they ever were able to secure alone.

Consolidation gives those interested in outdoor recreation, both hunting and fishing, a single unit to deal with on their problems. There is an obvious advantage from this standpoint. Therefore, I believe that the recommendation calling for the division of the Fish and Wildlife Service into two units is unsound.

The proposal to put the commercial fisheries division by itself in the Department of Commerce borders on the ridiculous. There can be no logical reason for it other than perhaps the desire of some commercial fishing interests to have a group which might be more sympathetic to their pleas.

A few states have separate units for commercial and sport fisheries, the latter usually combined with the fish and game agency. In the majority of such cases, however, the two fishery units have spent fully as much time trying to undermine each other as they have in conducting their work. The same thing could be expected if the commercial fishery groups succeeded in getting the commercial fishery activities in a unit by themselves. In fact, the basic reasoning behind the desire for separation is one of the strongest arguments for keeping the administration of the resource in one agency.

It obviously would be foolish to divide administration and research work for one group of fish into two separate parts, depending upon whether the man who catches it is going to eat it himself or sell it for someone else to eat. Such a procedure would be comparable to breaking down the administration of agricultural production by establishing one branch to handle regulation, research, and so forth for the parts of crops consumed by farmers and another unit for those to be processed by you folks or sold in the market place. The fishery resource is a unit and should be administered as a unit. Establishing two competing administrative groups would be a long step backward and an invitation to duplication of effort and wasted funds, which the Hoover Commission was intended to correct. Such an idea deserves no support from those who really are interested in the wise, efficient, and economical management of a valuable resource.

If the eventual reorganization follows the recommendations of the Hoover Commission Report, those interested in fish and wildlife will be confronted with a rather difficult dilemma. Fish and Wildlife are affected by both land and water management. If the Commission Report is followed, water-development will be in one agency and land-management in another. In that case, the fish and wildlife unit, wherever it is placed, will be faced with the necessity of working across departmental lines to secure proper management.

The minority report and the one by the Natural Resources task force recommended a Department of Natural Resources which could administer both the public lands and water resources. It is the only plan which would place to a considerable extent in one department the administration of both the public lands and the water resources, and that would afford an opportunity for closer cooperation. Even then, these agencies still would have to cross departmental lines to work with the others dealing directly with farmers and private landowners on crop and pasture land.

In conclusion, it seems that the proposal for the establishment of a Department of Natural Resources comes nearer to meeting the requirements of a sound, nation-wide conservation program. We certainly should not separate the Fish and Wildlife Service.

SHOULD THE HOOVER COMMISSION'S FISHERY RECOMMENDATIONS BE ADOPTED?

By Donald P. Loker, French Sardine Co.—for the Commercial Fishing Industry

One of the most important and constructive pieces of legislation ever approved is Public Law 162, 80th Congress. This law led to the creation of a body entitled "Commission on the Organization of the Executive Branch of the Government", or as it is more familiarly known—"The Hoover Commission."

For once, partisan politics seemingly had no part in a proposal to promote economy and efficiency in government, since a far-seeing Democratic President appointed a Republican ex-President to head the Commission, which itself was made up of 12 members, consisting of six Democrats and six Republicans.

The commercial fishing industry took a keen and sincere interest in this legislation and in the Commission set up to carry out its purpose. Our industry, just as any other, or indeed, as any good citizen, is interested in efficient and economic government, and like all industries—and in both management and labor—it contributes many millions of dollars each year in taxes to pay the cost of running our government.

But the commercial fishing industry had an exceptional interest in the activities of the Hoover Commission, as it was required to make recommendations as to the proper placement of fisheries in the federal government.

For more than 75 years, there has been in existence in one form or another some agency of the federal government directly concerned with fishery matters. The genesis of such an agency was the Act of February 9, 1871. By statutory authority more and more fishery functions have been delegated over the years so that the present agency now exercises a very considerabl degree of influence over the fisheries of the nation, whether they be sport or commercial. Today that organization is known as the Fish and Wildlife Service and is incorporated among the units in the Department of the Interior.

Nevertheless, as is true to some extent with most government agencies, the Service has been built up in a most haphazard manner. It is quite possible that less basic planning has gone into the evolution of the Service as now constituted, than in the development of any other government group.

Let us go back a little into recent history and see what this Fish and Wildlife Service is and how it was put together.

The Bureau of Fisheries and the Bureau of Biological Survey were transferred to the Department of Interior July 1, 1939. In the message transmitting this Reorganization Plan to Congress, the President stated:

"The plan provides for the transfer to the Department of the Interior of the Bureau of Fisheries from the Department of Commerce and the Bureau of Biological Survey from the Department of Agriculture. These two Bureaus have to do with conservation and utilization of the wildlife resources of the country, terrestrial and aquatic. Therefore, they should be grouped under the same departmental administration, and in that Department which, more than any other, is directly responsible for the administration and conservation of the public domain . . ."

It should be noted that the President's only reason for transferring these two agencies to the Department of Interior was that each was connected with the conservation and utilization of the wildlife resources of the country but the President failed to mention or apparently to take under study that in the Bureau of Fisheries there were many functions involved relating to the importance of fish as a commercial food product.

Congress gave little consideration to the desirability of this transfer and there were no hearings, no printed committee reports, and very little discussion on the floor of Congress. In fact, as Congressman Dirksen pointed out in the House, the Reorganization Plan was approved by the Senate in approximately six minutes! And for your information, this transfer of the Bureau of Fisheries and the Bureau of Biological Survey was not even mentioned on the floor of the Senate.

In 1940 the President went one step further and consolidated the Bureau of Fisheries and the Bureau of Biological Survey into one agency—the Fish and Wildlife Service in the Department of Interior. In his message transmitting to Congress the Reorganization Plan which accomplished this change, the President stated:

"Reorganization Plan II transferred the Bureau of Fisheries of the Department of Commerce and the Bureau of Biological Survey of the Department of Agriculture to the Department of the Interior and thus concentrated in one department the two bureaus responsible for the conservation and utilization of the wildlife resources of the Nation. On the basis of experience gained since this transfer, I find it necessary and desirable to consolidate these units into a single bureau to be known as the Fish and Wildlife Service.

"The Bureau of Biological Survey administers Federal laws relating to birds, land mammals, and amphibians whereas the Bureau of Fisheries deals with fishes, marine mammals, and other aquatic animals. The natural areas of operation of these two bureaus frequently coincide, and their activities are interrelated and similar in character. Consolidation will eliminate duplication of work, facilitate coordination of programs, and improve service to the public."

Here again, the sole reason for the consolidation seems to be that both agencies had some relation to conservation. Again the President failed to mention those additional activities in the Bureau of Fisheries which relate to the use of fish as a food.

Congress again appeared disinclined to consider the merits of this Reorganization Plan and the consolidation of these two bureaus. There were no committee hearings, no printed committee reports, and no discussions on the floor of Congress. This Reorganization Plan also went into effect and opponents of such a consolidation were given no opportunity to be heard.

Perhaps you can understand now why the commercial fishing industry was so intensely interested in the creation of the Hoover Commission and in the task force which was set up to study natural resources.

I see no reason why I should take the time at this point to go into the report of this task committee, since that report, together with supplementary material may be readily obtained by anyone. For the benefit of those who may not have read it, however, it is known as "Task Force Report on Natural Resources (Appendix L), Prepared for the Commission on Organization of the Executive Branch of the Government."

This task force report is briefly summarized as follows:

"1. That the Federal functions dealing with fishery resources be consolidated in a Fisheries Service.

"2. That the other responsibilities of the Fish and Wildlife Service be placed under a Wildlife Service.

"3. That both the Fisheries Service and the Wildlife Service be placed in a Department of Natural Resources.

"4. That the basic data and research activities of the Fisheries Service and the Wildlife Service be made adequate to assure the development of sound policies and effective administration.

"5. That the Federal Government give adequate attention to the need for sound development of fishery and wildlife resources and the needs of an expanding fisheries industry.

"6. That adequate provision be made for the coordination of the work of the two Services with each other and with other agencies of the Department of Natural Resources and other departments."

The Hoover Commission then submitted to the Congress reports con-

taining its recommendations as to proposals to reorganize the Departments of Commerce and Interior.

These reports, approved in toto by eight Commissioners, contained the recommendation that all commercial fishery activities of the Department of the Interior be transferred to a Bureau of Commercial Fisheries in the Department of Commerce. Four of the 12 dissented from this recommendation but three of the same four supported in part the recommendations of the Natural Resources task force. The fourth dissenter simply favored retention of the Fish and Wildlife Service in the Department of the Interior.

It is significant that all concerned with this study—all completely disinterested persons, mind you!—agreed that reorganization would promote efficiency in government handling of fishery matters. All here today do not necessarily agree with that premise but I am sure all of us *are* interested in the increased efficiency and effectiveness of a fisheries department. We may have different ideas as to what is needed. Some, for example, may feel that all that is necessary to improve efficiency is increased appropriations; some may feel decreases in some appropriations would accomplish the same result, while others present may—and I might add, certainly do—feel that other steps are necessary to achieve the most efficient management of fishery matters.

What then does the commercial fishing industry think of the foregoing recommendations?

The commercial fishing industry agrees with all of the recommendations in part but not in whole.

It definitely favors the separation of fisheries from wildlife, whether fisheries be transferred to Commerce or whether a new Department of Natural Resources be created.

May I explain:

President Roosevelt's statement of the advantages to be gained by the consolidation are very compelling and if experience since 1940 had shown that advantages had resulted in respect to fisheries, our case would be very weak indeed! In actual practice, however, these advantages simply do not appear. The natural areas of operation seldom coincide. Consolidation cannot reduce duplication of work because there is very little duplication. It does not facilitate coordination of programs which by nature are separate. A wildlife biologist cannot be substituted for a fishery biologist and this has not been attempted. The administrative details of fishery programs are so different than those of wildlife programs that they cannot be handled except by men who have different background, training and experience.

These are but a few examples of areas where because of the comparatively close relationship it was expected the claimed benefits would materialize, but experience has proven it necessary to have fisheries work done by people with fisheries training and wildlife work handled by people with wildlife training. The lack of promised benefits from the consolidation has not been our only worry. One of our primary concerns has been that consolidation of fisheries activities with wildlife activties has resulted not in coordination but in subordination!

A logical reason for this is the chain of command in the Fish and Wildlife Service. Not only is the Director and one of the two Assistant Directors from the wildlife branch, but so are all of the Regional Directors. Not only is the Director of the Alaska region a wildlife man, but so are the Directors of the New England region and the Pacific Coast region. There we have men with no experience or training in fisheries, directing federal fishery policy in regions now producing 4,000,000,000 pounds of essential food annually and probably where, with efficient management, this harvest could be vastly increased.

The most important fishery function of the Fish and Wildlife Service is the conservation of the Alaska salmon fisheries under the White Act of 1924, by which the Service is given authority to adopt and enforce regulations for the protection of Alaska salmon. Although the Service, by virtue of this authority, has undertaken an extensive program of research and regulation, the fact remains that production from the resource has been steadily going down. A few pack figures will suffice to illustrate this point.

Year	*Cases*
1935	5,155,826
1936	8,454,948
1940	5,026,378
1942	5,089,509
1945	4,338,692
1946	3,971,109
1947	4,302,466
1948	4,010,612

Why is this condition present?

Subordination of interest in fishery matters and lack of sympathetic understanding of this resource has resulted in inefficiency, misdirected research, improper and insufficient regulations, and inadequate enforcement.

Of course, it may be claimed that wildlife enforcement officers have been assigned to enforcing the Alaska Fishery Regulations on occasion, but those occasions have been few and far between; the number of men so assigned is extremely small and there is some question as to whether the assignment of men inexperienced in problems of these fisheries has contributed at all to the effective enforcemnt of the Fishery Regulations. As a matter of fact, there is reason to believe that enforcement of the Alaskan Fishery Regulations has suffered by reason of diversion of funds, and of planes and patrol vessels which could have been operated with those funds, to enforcement of Alaska Game Regulations. And these are some of the reasons why experienced and capable fisheries experts have resigned from the Service in great numbers in recent years, or have been transferred to other assignments, and have thereby crippled the program.

The situation in Alaska had become so dangerous that the Alaska salmon industry itself in 1947, in cooperation with the University of Washington, established the Fisheries Research Institute, financed entirely by the salmon industry, but under the complete control of the University, to find the answers to the problems that the Fish and Wildlife service had been looking for, but which, as has been indicated above, it failed to find.

We have been told by representatives of the Fish and Wildlife Service that one of the reasons fisheries have been better off since the transfer of the old Bureau of Fisheries from the Department of Commerce, and the consolidation of fisheries with wildlife in the Department of Interior, is that the Fish and Wildlife Service has been able to obtain appropriations of far greater size for fishery work than was obtained by the old Bureau of Fisheries.

Let us examine that for a moment.

I wonder whether we are getting as much return per dollar spent as we obtained while the Bureau of Fisheries was in the Department of Commerce. The commercial fishing industry feels that we are not, for while we may be getting more dollars, inflation has lowered the dollar value to such a degree that increased appropriations are woefully offset.

The correct scale to use, from the standpoint of conservation, business, or just plain common sense, is what has been accomplished? Very frankly, not enough, and the industry feels that proper attention has not been accorded our fishery problems, and as a result the industry is profoundly disturbed.

And again, let me emphasize at this point—it is not necessarily the number of dollars appropriated—maybe we have enough now. What counts is how efficiently those dollars are used toward the solution of our grave and pressing problems.

The only other reason I have ever heard advanced by those who oppose the separation of fisheries from wildlife is that such a splitting up would be a step backward. But they cannot tell us why!

I spoke a moment ago about subordination of fisheries to wildlife.

If this were the only instance wherein handling of fisheries were subordinated, it would be bad enough, but the facts are that fisheries are not only subordinated to wildlife by the authorities of the Department of Interior, but fisheries are subordinated to every other single activity in that Department where there is even the slightest contact between the respective interests.

I merely mention this now to remind you that the reason for this subordination is the fact that fisheries apparently are considered only a minor part of a not too important unit within the Department of Interior.

Now may I call your attention to an important point that is frequently overlooked by our friends in the wildlife field as well as by a good many of our friends connected with recreational fishing interests. This is that the fisheries functions of the federal government and the interests of the commercial fishing industry are concerned almost entirely with high seas fishery resources, with the notable exception of the Great Lakes fresh water fisheries. Only to a minor degree, moreover, do the inland sport fisheries of the nation, the fisheries of our streams and lakes, come within the scope of the federal government. The federal government's activity in this field is limited to the operation of some hatcheries and to some minor biological studies, but nowhere does it have the authority to regulate the inland fisheries. In fact, except in the Territory of Alaska, and the sponge fishery of Florida, the federal government has no authority to initiate regulations for any fishery. Recreational fishing on the high seas by comparison with commercial fishing on the high seas is extremely minor. It must be recognized, however, that many of the fishes in the commercial fisheries are important to the recreational fishermen and it is for this reason that the commercial fishing industry, while attempting in no way to speak for the sport fishermen of the country, feels that all fishery functions of the federal government should be together and that any attempt to separate them might prove unwise. Not only could it lead to conflicts between the two groups when there is no real conflict of major interest, but in all probablity it could result in a loss of efficiency and too much duplication of effort. The area wherein the interests of both groups coincide far exceeds the area wherein their interests differ.

The commercial fishing industry, as well as the sportsmen, is intensely concerned with the conservation of resources and, we believe, to an even greater degree, for fish are the necessary raw material of our business.

Our interest in conservation is neither theoretical nor recreational —it is absolutely essential, for if the fishery resources decrease, our business becomes uneconomic and we go broke. We conserve properly or we die.

To show what I mean, let me list a few illustrations of the conservation activities in which the commercial fishing industry is directly involved:

1. The Atlantic States Marine Fisheries Commission. This is the organization of all the states on the Atlantic Seaboard which was set up under authority of Congress and 11 state legislatures to correlate and extend the fisheries conservation work of the Atlantic States. In the seven years of its activity it has accomplished a great deal toward this end.

Commercial industry men pushed this compact in the Congress and the state legislatures and industry men from each of the states serve as Commissioners, and the Chairman of the Commission is the owner of a thriving commercial fish business.

2. The Pacific Marine Fisheries Commission. This, like the one above, was adopted and put into action through pressure by the commercial fishery people who serve actively on its advisory board, and strongly support conservation research and proposals for proper fishery management.

3. Gulf States Marine Fisheries Commission. This is almost identical with the Atlantic States Commission. Industry men pushed for its adoption, act as Commissioners, and are interested in pushing its program for conservation research.

4. International Fisheries Commission. The Halibut Commission is the outstanding example of fishery conservation management in the world. The halibut industry forced the adoption of the treaty between the United States and Canada that set up the Commission, has worked with the Commission at every step of its way for 25 years, and is continuing to do so today. This is the strongest and most strictly regulated commercial fishery in the world. The industry not only supports the regulations of its activities but is pressing both governments today to give the Halibut Commission additional regulatory powers.

5. There are four other similar international treaties to set up commissions which will have the responsibility for conservation in fisheries which produce nearly a billion pounds of fish per year for American fishermen. These are (1) The International Pacific Salmon Fisheries Commission, (2) The International Commission for the Northwest Atlantic Fisheries, (3) The International Commission for the Scientific Investigation of Tuna, and (4) The Inter-American Tropical Tuna Commission.

In each case the commercial fishing industry has pressed for the adoption of these treaties and in the salmon commission has already participated for several years in planning and carrying out intensive regulations governing the catching of salmon covered by the Commission's authority.

6. California Sardine Advisory Commission. Let me tell you about something of which we Californians are a little proud. A few years ago our California sardine began to decline in productiveness. Immediately the sardine industry forced through the California Legislature a measure which doubled our tonnage tax and set aside new funds for conservation research. I do not know another United States industry that has voluntarily increased its tax bill for the specific purpose of having investigations made which would restrict its activities, and a comment as to this fact appears in the State of California Legislature.

7. Fisheries Research Institute.

The Alaska salmon industry, alarmed by the decrease in the source of their raw material, as I have already reported, voted to tax themselves voluntarily so much per case of salmon packed in order to provide a fund for biological research to find out what was the matter with the present conservation regulations and where they could be improved to maintain normal abundance, which so obviously was imperative, if the Alaska salmon industry was not to perish.

This voluntary program of taxation has been going on for three years and has raised more money for biological research than the federal government itself puts into the Alaska fisheries. It comes directly out of the salmon canners' pockets and it is given willingly. This program has, in fact, been broadly increased in each of the three years since its inception.

We are trying to be foresighted, for we realize the necessity of these treaties, these investigations, these regulations, before the resource is depleted, and not afterward.

I have dwelt in some detail on what the industry is doing to get the information necessary for adequate conservation regulation. Where conservation is needed we not only help to get it, we demand it, and we are proud of the record of the commercial fishing industry in the conservation of this great resource.

But while we have intense interest in fish conservation, this is only half of the worries we have with raw ma-

terial. We have a problem of supply and we must explore continually for new sources to feed the nation and to meet the growing demand for our product.

Also, as a food industry we are in the fortunate position of dealing with one of the greatest potential sources of protein food in the world.

Centuries of land abuse in every civilized country have lessened the ability of that land to produce essential protein foods, but the vast resources of our seas have scarcely been touched.

Rich new areas are known to be available close to the United States in both the Atlantic and the Pacific and are believed to be in the Gulf of Mexico.

The reason why these and other fishery resources all over the world are not being utilized is that at the present time they cannot be brought to market at a price the consumer can pay. We need to know more about the seasonal abundance and occurrence of these resources so that our fishermen can be adequately informed. Too, there are a thousand and one other problems that we have in getting the costs of harvesting, processing, and marketing down to the point where we can afford to get the food out of the sea onto the consumer' table where it does good.

This is where our problems depart widely from those of the inland fisherman and hunter. The game and fish resources of the land and inland waters are known, and are certainly less than we would like. Production from those resources can only be obtained and increased by strong conservation regulation measures. Here is no room for expansion of any consequence, and all thinking must be directed toward conservation.

But, for our major ocean fisheries the emphasis must also be on better and cheaper means of harvesting.

I want to drive home to you as hard as I can that waste from underutilization is just as dangerous as waste from over-utilization and more food is being wasted in the sea each year from under-harvesting than is being taken from the sea. This is our problem, too.

Besides conservation, both sport and commercial groups have another point in common which should weld us together. The noncommercial fishing groups emphasize the recreational feature of the nation's fisheries, but they would be the last to claim that there is no commercial importance attached to recreational fishing. Indeed, they hasten to point out the tremendous value to the nation's economy of the sale of tackle, boats, bait, and also the vast revenue derived by the states from the sale of fishing licenses. It would seem, therefore, that the recreational fishing interests would, of necessity, derive definite benefits from being included within a department whose primary interest is the welfare of the business economy of this country. And to us it seems quite obvious that this reasoning points to the Department of Commerce.

The preceding discussion has clearly expressed the convictions of the fishing industry and we are sure that the Department of Commerce would support those convictions.

Surely no department would wish the destruction of this natural resource of our country, nor would the fishing industry allow it. Therefore, we concur with the Hoover Commission's recommendation that the Bureau of Fisheries be established in the Department of Commerce, while a Bureau of Wildlife or a Wildlife Service remain in the Department of Interior.

Such a move would ensure that fisheries would be managed by men whose primary interest would be fisheries; whose training would be in fisheries and whose outlook would be a practical businesslike outlook.

Additional advantage would result from the removal of fisheries to a department where their interests would not be subordinated—again note the use of this word subordinate—to the interests of other groups, and policies of other bureaus concerned with empire-building and paternalistic schemes. In plain, blunt language, I am referring to the domination of the Department of Interior by the Bureau of Reclamation, the Bureau of Land Management, the Bureau of Indian Affairs, and the various power administrations. The record of the treatment accorded fisheries when any seeming conflict of interest arose between it and these other groups is shameful indeed! Ask any salmon packer, commercial salmon fisherman, or any man who fishes salmon for sport on the West Coast, about the proposals to destroy this valuable salmon resource by the unwise construction of dams! Their side of the story reveals facts of interest and importance not only to them but to every citizen in our country. The benefits we were told would result from the reorganization which threw the Bureau of Fisheries and the Biological Survey together simply did not materialize.

The Hoover Commission recommended splitting fish from wildlife and putting the former in the Department of Commerce. The task force on Natural Resources recommended splitting fish from wildlife, but putting both resulting services into a Department of Natural Resources.

We in the commercial fisheries think the transfer of fisheries to the Department of Commerce, where it functioned so well for to many years during the growth of our fisheries would be the soundest move.

We are, however, not at all adamant on this point and if it is the consensus of the majority that the task force recommendations be followed, we will not complain.

Where we are adamant is that the basic recommendation of the Hoover Commission be followed; that is, to split fish from wildlife so that we can once again have efficient management for both of these valuable natural resources.

We must have a Fisheries Service in the federal government which is administered by men who know fisheries, who have been trained in fisheries administration and fisheries research, and who by experience know how to deal with a fishery problem when it is put before them.

We must have a fisheries service that has a sympathetic interest in fisheries, staffed by men who have the imagination and vision required to plan fisheries programs of their own and to coordinate those programs with the programs of the sovereign states, the commercial industry, the sportsmen's associations, and the trade associations.

These men must review the basic objectives of federal policy concerning fisheries and organize a dynamic program for the maximum utilization and sound conservation of this valuable resource.

This revitalized service must be capable of providing expert guidance and efficient aid to the fisheries agencies of the 48 states and the Territories in dealing with the problems of sport fish in inland and coastal waters. It must be able to lead the industry and the state agencies in high seas biological and oceanographical research; it must establish vastly improved programs for technological problems of gear utilization and development, marketing of species not now utilized, consumer education, and we must have additional help in surveys of potential foreign markets; collection of statistical data; and the analysis of marketing trends and developments in the United States market, and in the markets of the world.

In short, gentlemen, we must have a fisheries service that will know fish, think fish, and dream fish. A service which will represent our industry at high level in the federal government and which we can proudly support. A service finally, which will lead us to the full utilization and proper conservation of the fisheries resources of the seas.

Canning Problems Conference

CANNERY SAFETY CALLS FOR EDUCATION

By E. G. Hutzley, Safety and Fire Prevention Engineer, Campbell Soup Co., Camden, N. J.

It should be made clear immediately that no one person can know all the answers to safety. Safety has become a broad, complex and sometimes confounding thing which constantly enters our life and work. Webster says, "Safety is the condition of being safe, a freedom of danger or hazards", or "being devoid of whatever exposes one to danger or harm".

In industry, where the greatest accomplishments have been made, safety is becoming recognized as an important part of over-all planning. It covers protection of manpower and property as well as an important factor of industrial relations and production cost reduction. It is impossible to cover every phase of it here. In the time allotted me, I will briefly concentrate on the benefits of safety education to management, supervisor, and employee and will try to show why we need it, how we get it, and what it will do for us after we have it.

The need for safety education is very apparent not only in industry, but in every phase of our daily lives. The latest complete national figures (for 1948) show that, altogether, there were 10,400,000 accidental injuries, including 98,000 accidental deaths. There were 10,300,000 non-fatal injuries, including 370,000 permanent impairments, leaving over 9,900,000 temporary total disabilities or what we call "lost-time accidents" with a total cost of $4,300,000,000.

Industrial records for the same period show 1,950,000 accidental injuries of which 16,500 were deaths and 80,000 were permanent impairments. The balance of approximately 1,850,000 injuries were what we know as "lost-time accidents".

The cost of industrial accidental injuries is a tremendous amount. The estimated cost is $2,650,000,000. The actual cost for care of injuries and compensation insurance paid was $1,350,000,000. The remaining, almost equally huge amount is chargeable to other indirect costs. Wages and purchasing power lost, damage to equipment, and production time lost by others than the injured persons, are among these indirect costs. There can be no monetary figure set for dead or permanently crippled humans.

Every accidental injury we have in our industry contributes to these figures. If they happen in your plant, they certainly contribute to costs. If you have a series of them, they can reduce profit to minus zero. Accidents have been the deciding element in many cases in which industries have gone bankrupt.

We all know the canning industry generally has a high frequency and severity rating. The national average frequency rate for industry is 11.59. For canning and preserving the rate is 21.1. This high rate is caused by several factors. We know that the canning industry is definitely a hazardous occupation. The ways to get hurt are many. The "big 3" in causes are falls, being struck by various objects, and burns. Cuts, infections, eye injuries, and strains are also well up in the list.

High speed, short period peak seasons make it necessary to hire large numbers of temporary employees. Many are put on jobs with which they may be totally unfamiliar. They are given only the briefest of job instructions if any.

Often migratory workers are responsible for a sharp trend upward in peak season accidents. This can be remedied, as our experience at Campbell Soup Company proves. In 1942, when manpower was really a problem, there were 51 lost-time accidents in our peak season month. In 1943, when peak production was carried on with inexperienced help, there were 35 lost-time accidents. In 1944 there were 18. Continued effort has brought lost-time accidents to six for the peak month of 1949.

But permanent workers get hurt too, proving that safety is not an abstract or the fault of temporary conditions. However, permanent workers seldom are hurt in peak seasons, because they are usually temporary supervisors showing the green help how to do their job safely.

Most accidental injuries in the canning industry can be prevented. Many factors must be considered to reach a final conclusion as to causes, but as a rule, more than nine out of 10 accidents happen because an unsafe act of a worker is coupled with an unsafe mechanical or physical condition.

Most of you here today are owners or managers. In many cases your supervisory staff is small. Often they are the skeleton maintenance crew who take over when production starts. Some feel a safety program is desirable but impractical or unobtainable from a cost standpoint. Some of you feel it is best to leave well enough alone. The thing to ask yourself is, "Do we have a safety problem in our organization?"

To determine this, count up your accidental injuries per year for the past five years. How many of them resulted in death—or permanent disability? How many were compensation cases? How many workdays were lost by men you couldn't spare? What are your insurance rates? How much did accidents cost in damage to equipment? For broken machinery or tools? For spoiled materials or finished product? These figures may take a little time to compile, but they will give a positive answer.

Through such studies, potential savings by reduction of accidents can be determined. How much can be saved by reducing accidents 25 percent? By 50 percent? By 75 percent? How would it reduce your insurance rates? What would it be worth in better quality? Decreased interruptions? Increased employee morale? How much would it cost for a program to reduce accidents? Will the cost be justified?

Laying aside the possible humanitarian benefits, which are of the highest importance, we must admit that, from the cold-blooded standpoint of profit and loss, accidental injuries are poor business. In addition to the cost, their occurrence is a direct reflection upon the company having them.

While accidents are unplanned occurrences or happenings without design, there is still entirely too much thinking that they are "just one of those things". The feeling that "accidents will happen" is both foolish and costly in manpower, waste and lost production time, because safety methods and education are passed over as being "fancy trimming" or an unnecessary expense. Safety programs are established to prevent accidents from happening.

If you need a safety program, the time to start it is now. The biggest cost will be the time spent in doing things that should have been done in the first place. Safety is not gingerbread, nor a complicated series of magic tricks, but mostly common sense. Perhaps the greatest drawback is the general thinking that safety is still a mechanical instead of a "human relations" problem.

William M. Jeffers, former president of the Union Pacific Railroad Company says, "In the field of human relations, nothing is so important as safety. Safety applies with equal force to the individual, to the family, to the employer, to the state, to the nation and to international affairs. . . . Safety, in its widest sense, concerns the happiness, contentment and freedom of mankind".

Few accidents arise from mechanical causes alone. Accidents will continue to a greater or lesser degree as long as human errors crop up. No way has yet been found to overcome lack of concentration. Inexperienced help still means lack of job hazard knowledge. Worry, bad judgment, haste and lack of cooperation are human factors difficult to overcome.

Lax supervision, defective tools and equipment and poor placement of workers only proves that supervisors are human, too. The better our knowledge or understanding of our workers, the greater is the possibility of low accident frequency and severity rates.

Up to now, it has been shown "why" we need safety education. Let's see "how" we can get it. Most safety experts feel that the best approach to safety problems is through "Engineering", "Enforcement", and "Education". To me that "E" for "Education" is the big one. We favor education that is simple and direct. It must reach every level of employment. Employees must be shown that accidents do not always happen to "the other guy". Thirty- to 90-second personal contact talks and visual education is the best way. Posters, payroll inserts, graphic charts, bulletin board messages of not over two brief paragraphs, or illustrated news reports of accidents are some of the ways.

Instruction must be brief and to the point. To help train temporary seasonal workers, the National Safety Council soon will have a "Safety-Graf" available. It covers basic canning problems in simple, direct fashion. It was designed by field men handling large numbers of temporary workers. It can be understood by the most uneducated person. The cost will be about $12 and it can be used indefinitely. It will save wear and tear on your supervisors.

Supervisors are the key men of any industrial safety program. Why? Because the supervisor is the closest management contact with the workers. In fact, to most of them he is the management. The good ones know the shortcomings and the virtues of their workers. They are constantly alert to keep them on the job at top capacity. No one is better suited to approach and correct a worker heading for an accident.

A supervisor's responsibility not only covers his work and those things he produces, but it covers also those people he directs. One of his foremost duties is to see that these people accomplish their work safely. Prevention of accidents must be handled in the same manner that other production matters are handled. Here are a supervisor's basic responsibilities in safety work.

Observe and correct hazards or unsafe practices.

Instruct workers in safe working procedures.

Maintain good housekeeping on the job.

Place men to best advantage for safety.

See that safety posters and first-aid kits are on hand and that safety equipment is used.

Provide a safety bulletin board.

Prepare accident and compensation reports.

Assist in first aid (if properly trained).

Insist on getting reports on all accidents.

Keep stairways and aisles clear.

Have list of doctors and hospitals.

This seems like a big order. If you will analyze these duties, it will be found they are what is supposed to be done anyhow. Too often the supervisor's work is planned without full consideration of safety factors. When that happens you are gambling with large sums of money, wasted manpower, materials, and production time lost. There is little excuse for this.

Books and other materials covering modern training in safety problems and methods are available at reasonable cost. Manuals by the National Safety Council, National Foremen's Institute, Glenn Gardiner, Fred Lippert, Metropolitan, American Mutual, and Liberty Mutual Insurance Companies are just a few places where they may be obtained. Safety posters may also be obtained from most of these sources.

A great quantity of similar material is free. Ask for it and use it. It will help your supervisors to organize their safety thinking. You will be surprised at how much help you may obtain with a three cent stamp. Small plants, employing less than 300 people, can obtain membership in the National Safety Council for $50. For this sum you obtain posters, administrative instructions, engineering help and other worthwhile services.

Belonging to the National Safety Council, however, will not automatically stop your accidents. Someone must still work at prevention day in and day out.

To get back to human relations and its part in safety: Each individual does his best when he thinks he is obtaining a personal benefit. Each one who can be made to understand that safety is a good thing for him personally will be a safe worker and a good example to others.

A famous baseball star used to say, "Know ahead of time what you are going to do with the ball when you get it". What are you going to do with the safety problem when you get it? Hope everything will be o. k. or throw it out at first?

It is necessary to be sincere and safety-conscious. It is important to get employees interested in safety. This is one of the toughest things to gain and one of the hardest things to hold.

The first contact a worker has with his job is the time to make him conscious of the accident prevention program. It is much easier to fit a man or woman into a situation where he is expected to be safe from the beginning than it is to permit him to develop unsafe habits, then be introduced to whatever safety rules there are when he has had an injury.

The place to start instruction, then, is with your safety rules. Safety rules are as necessary in an industrial organization, as the game rules are in competitive sports such as basketball, football, or baseball. Safety rules are needed so that each employee can work by the same standard.

If rules are not reasonable and uniformly enforced for all employees, they soon become ineffective. If a rule applies to one person, it applies to everyone. Enforcement of rules must be impartial.

After new workers are started, follow through to see that their instructions have "sunk in". If any are committing unsafe acts or working in a hazardous manner, they should be stopped—quick—and be put straight. There is nothing so important that 60 seconds cannot be spared to stop trouble. Passing up a potential accident with the thought that someone will take care of the matter later may cause a serious injury and smash your production schedule for the next two weeks. The dividends from a small investment in safety instruction are big dividends.

In calling attention to an unsafe act, the supervisor should point out the employee's error in safe practice and judgment, by offering a sane reason for correction. On-the-spot control cannot be too strongly recommended.

Many hazards can be eliminated by getting your men and women to report anything they think is an unsafe condition. Get the condition cleaned up in as short a time as possible, so that they can see that you mean business. Give them credit on every occasion possible. You may not entirely agree with what they are proposing, but there is no point in quarreling with them.

There are times when it is necessary to make an accident report. The type of report which reads, "Machine started and caught a man's hand" tells exactly nothing. A good report is worth its weight in gold. It helps localize trouble. It should offer recommendations for betterment and elimination of hazards. It should be clear and concise enough to be used as evidence in a compensation court. There is no better way to review or refresh the memory than by a good report.

Insist on reports bearing the injured person's name, the date, time of the accident, place of the accident, the nature of the injury. You want to know how the injury occurred, what machine, tool or appliance was involved, whether there were witnesses and what can be done to prevent a similar injury. Additional remarks

or information may show that changes are necessary and worthwhile. With a report of this kind, it is pretty hard to be caught unprepared by a compensation case or liability suit from an injury you had forgotten all about.

We have tried to show "why" a safety program is needed and outline "how" one may be obtained. You will want to know "what are the benefits?" "What does the foregoing mean besides more work?"

It means that any management has just cause to question the over-all efficiency of its plant, if the accident record is high. A poor accident record will almost always serve as a warning sign that something in the plant is not up to par, and it doesn't mean more work either.

If you are lazy, and most of us are, a minimum of accidental injuries will certainly save a lot of work. The time spent making out reports, explaining to labor departments and trying to figure out how to keep production going short-handed can be spent on other important matters. Low injury frequency certainly cuts down worry.

A couple of years back, a plant employing about 900 people had 82 accidental injuries from January 1, 1946, to January 1, 1947. A study proved:

8 of them occurred to employees with less than one week's service.

24 of them occurred to employees with less than one month's service.

21 of them occurred to employees with less than six month's service.

11 of them occurred to employees with less than one year's service.

64 people, or 75 percent of the accidents were to what must be called new help.

What does this mean? It means an awful lot of time was consumed by various supervisors chasing down causes, getting production back on schedules, explaining why, shifting employees, making reports, sweating their brains out on a hundred details each time one of these accidents occurred. Figure it out for yourself, is it easier to start each employee out right, or to grow old picking up loose ends?

The management supervision in this plant figured that the employees should be taught the facts of safety life. In the past two years, there have been only three lost-time injuries, all caused by flagrant violations of safety rules.

If a way could be shown to help keep all your people on the job, reasonably happy and producing at their profitable best, to hold waste at a new low point, have a minimum of grievances and permit supervisors to devote their entire time to producing instead of chasing unplanned troubles—you would think both management and supervisors would jump to try it. It is a benefit that couldn't be passed up, but it is passed up too often. A sound safety program offers that type of help. It is an excellent long-range investment.

Safety is actually not a cost, but a cost reduction factor. Everyone here can utilize it. The biggest requirement is sound common sense planning. It is the foundation upon which accident frequency is being steadily reduced in our own and many other companies. It is not a one-man job, but a team job of management-supervisor and employee, with the supervisor as the key man.

Unfortunately, the actual cost of a poor safety record is not always realized. Too frequently, safety costs are buried in other costs and activities. The actual facts concerning accident costs may not be properly reported or presented as such. There is not a man in this room who would not exert every effort possible to keep one of his employees from being seriously injured. Accidents have caused many of us here worry and sadness. We all want to stop them.

Management can have as good or as poor a safety record as it wants. Those who must carry the safety problems will work in relation to the support and interest shown by the front office. If the same honest effort is devoted to safety that is given other production problems, your plant will have injuries only on rare occasions.

You can start a program and make it pay quick dividends. Accidents usually happen because someone blinks his eyes and walks by an infraction or unsafe condition, instead of sparing 60 seconds in correction. I repeat, sound safety is mostly a matter of common sense education which must be taught constantly. Materials to help plan and guide a program are readily available.

As long as unpredictable humans remain in the picture, it is doubtful whether results will ever be perfect. But perfection is a good goal to shoot at. Remember safety must be given to people like oil is given a machine. A little squirt every day keeps the machine running smoothly.

CURRENT ASPECTS OF DIELECTRIC HEATING

By M. P. Vore, Westinghouse Electric and Manufacturing Co. Baltimore, Md.

Spectacular new uses of electronics have been found during the last few years. These applications range from dispatching of taxicabs, the flow-brightening of tin on sheet steel, the rapid setting of glue in wood assembly to navigation through crowded waterways in dense fog. Naturally, every alert business man wishes to explore the potentialities of this glamorous new tool for solving some of the age-old problems in his industry.

Time and other considerations make it necessary to limit this article to one phase of electronics—dielectric heating. We shall review the characteristics and limitations of this method of heating to try to give each of you a basis for deciding whether dielectric heating might be technically applicable to some of your canning problems such as sterilization and whether dielectric heating so applied would be economically advantageous.

When a non-conductor or a poor conductor of electricity is placed in a high frequency electric field, it is heated. The electric fields used industrially in dielectric heating are similar to those generated by radio broadcast stations, but they are about a thousand million times stronger.

Usually material to be heated is placed between electrodes which are often in the form of flat plates. The electrodes are connected to a radio frequency generator as illustrated in Figure II which supplies a high alternating voltage. Heat is generated by a molecular stress or friction phenomenon somewhat as illustrated in Figures III-A, III-B, and III-C. At this point we can see one of the unique properties of dielectric heating. The molecules in the center of the dielectric are stressed just as much as those near the surfaces and edges. Heat generation is in the material itself and distributed all through the material.

The amount of heat generated in the dielectric (BTU/cubic inch) is determined by three variables—frequency, voltage, and a characteristic of the material called its "loss factor" as illustrated in Figures IV-A, IV-B, and IV-C. Here is another peculiar property of dielectric heating. The rate of heating depends on a property of the material. Non-homogeneous substances can be expected to heat non-uniformly!

Frequencies in common use for dielectric heating range from 5,000,000 to about 40,000,000 cycles per second. The voltage that can be utilized is limited to an amount that the substance to be heated will withstand without breaking down. Generally the voltage is less than 5,000 volts for each inch of thickness of the dielectric. Loss factors range widely from about .025 to 0.75. Rates of heat generation in the neighborhood of 55 BTU/min./cubic inch, or higher in special cases are practicable at these frequencies and voltages.

During the recent war, means of generating appreciable quantities of power at frequencies of hundreds to thousands of millions of cycles per second were developed. There has been some hope that the use of these

FIGURE I

Continuous Flow-Brightening of Tinplate

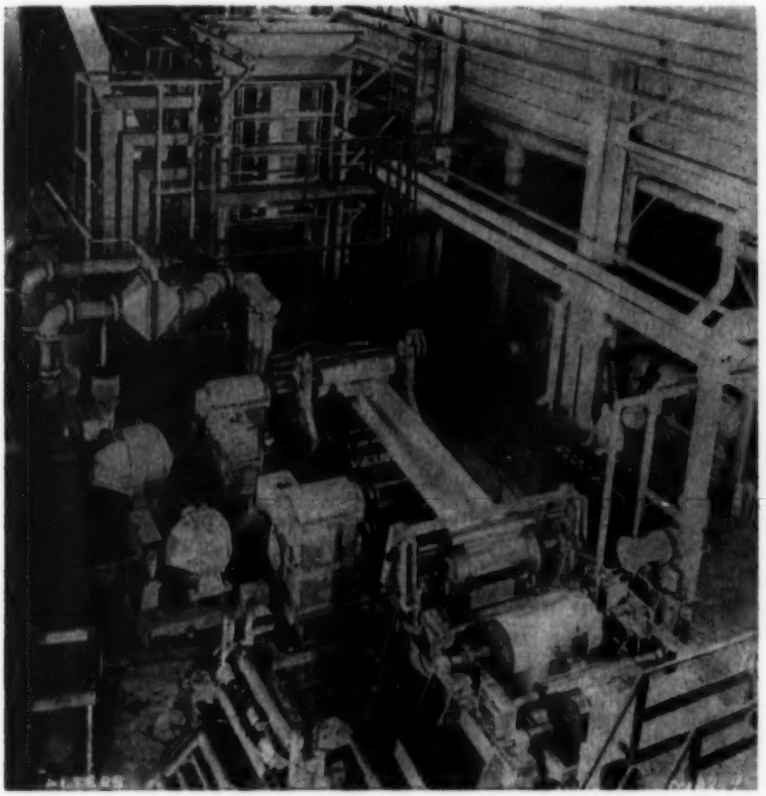


FIGURE II

Method of Dielectric Heating

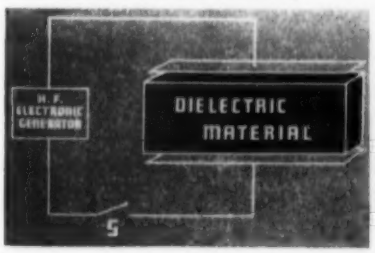


FIGURE III-A

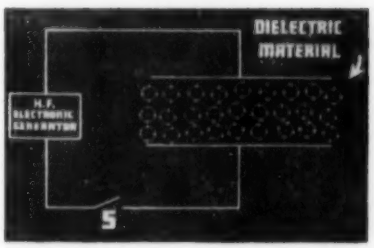


FIGURE III-B

Theory of Dielectric Heating

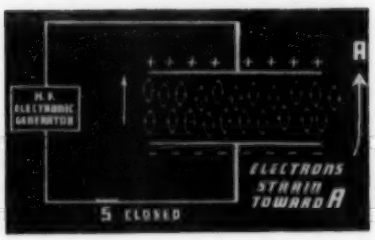


FIGURE III-C

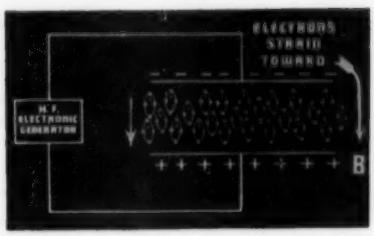


FIGURE IV-A

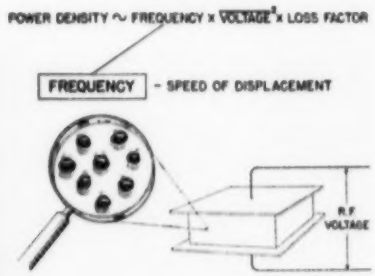


FIGURE IV-B

Variables Affecting Dielectric Heating

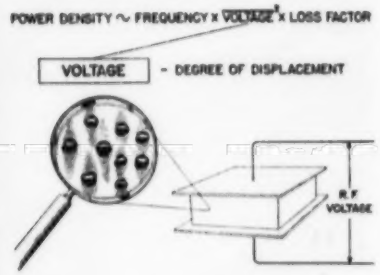
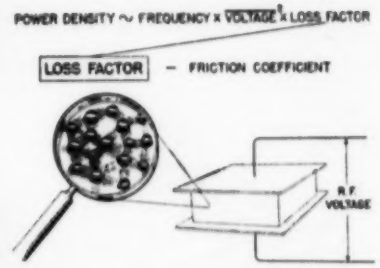


FIGURE IV-C

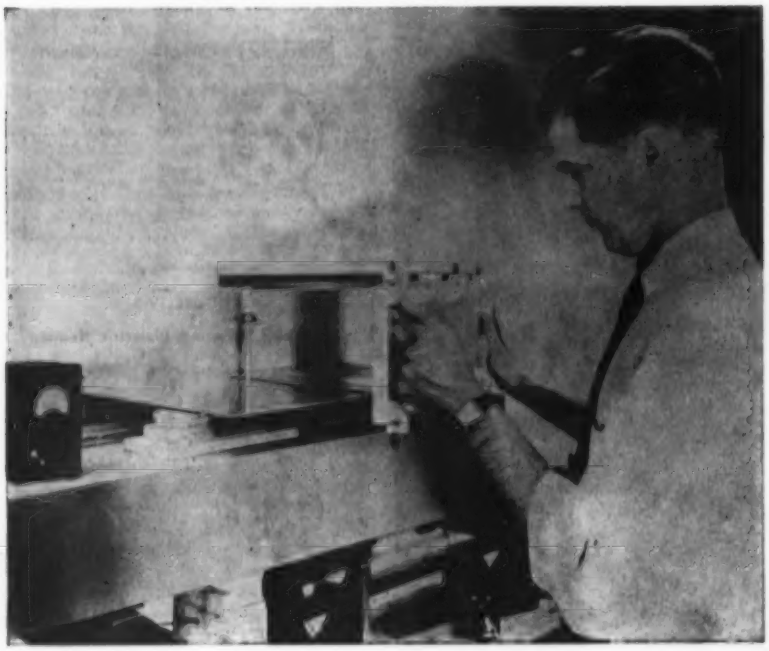


"micro wave" or very high frequencies for dielectric heating would solve a lot of the problems encountered in dielectric heating at more conventional high frequencies. The very high frequencies would produce high rates of heating at moderate voltages. At these frequencies the applicator could be a cavity not unlike a conventional oven (such as is illustrated in Figure V) rather than a pair of electrodes. It was also hoped by some that non-homogeneous materials would heat more uniformly because the spread in values of loss factors tends to become less at higher frequencies.

The art of dielectric heating at very high frequencies is in its early infancy. Generators are inefficient and limited in output to 5 kilowatts (275 BTU/min.) or less, and even at this

FIGURE V

Cavity for Dielectric Heating at Very High Frequencies



low power they are not developed to the point where they can be considered entirely suitable for commercial installations which involve operation and maintenance by personnel with little specialized knowledge. The technical problems involved in transmitting and using very high frequency energy are very great, and the hope of those who visualized uniform heating of non-homogeneous materials has not been realized except in a limited sense.

The power required to do any given job of heating is conveniently expressed in kilowatts and is proportional to the weight of material to be heated, its specific heat and the rate of temperature rise required. The formula is illustrated in Figure VI.

FIGURE VI

Thermal Power Requirements

POWER ~ MASS x SPECIFIC HEAT x TEMP. RISE

$$\text{POWER (kW)} = 1.76 \times 10^{-2} \times \frac{\text{LBS.}}{\text{MINUTE}} \times C \times \Delta T \text{ (DEGREES FAHRENHEIT)}$$

$$\frac{\text{POWER}}{\text{DENSITY}} \propto \frac{\text{POWER}}{\text{VOLUME}}$$

The cost of dielectric heating is a very important factor in determining its suitability for any process. The elements of cost are primary electrical power, the purchase of replacement vacuum tubes and the expense of necessary maintenance, and amortization of equipment investment. Figure VII shows these costs graphically based on a primary electric power cost of $.01 per kilowatt hour and an amortization period of 30,000 hours. This figure shows operating costs of $.03 to $.08 per radio frequency kilowatt hour or $8.80 to $23.50 per million BTU. Contrasted with the cost of steam heat which generally runs a little less than $1.00 per million BTU it is easy to see that dielectric heat is very expensive on a heat basis alone.

Properly used, however, the unique properties of dielectric heating make worthwhile savings possible. The facts that by dielectric heating, thick homogeneous materials are heated very quickly and uniformly throughout and that practically all of the energy supplied goes into the materials, (almost no heat escapes into the room), makes dielectric heating ideal for preheating plastics and rubber preparatory to molding. Applications of this sort are pictured in Figures VIII, IX and X, which show dielectric heating equipment for preheating for molding vacuum sweeper motor housings, solid industrial truck tires, and rubber tank treads respectively. In these cases dielectric heating results in cost savings by decreasing cure time in the mold, increasing mold life, decreasing first cost and maintenance cost of the molds, and increasing production rate.

The ability of dielectric heating to heat non-homogeneous substances selectively is used to advantage in the edge gluing of narrow boards to make wide panels. The electric field is applied through the panel in a direction parallel to the width of the glue lines. The uncured glue has a much greater loss factor than the wood and, therefore, absorbs most of the power. Dielectric heat cures the glue in 20 to 30 seconds. Dielectric heating coupled with automatic machinery accom-

FIGURE VII

Radio Frequency Generator Operating Cost

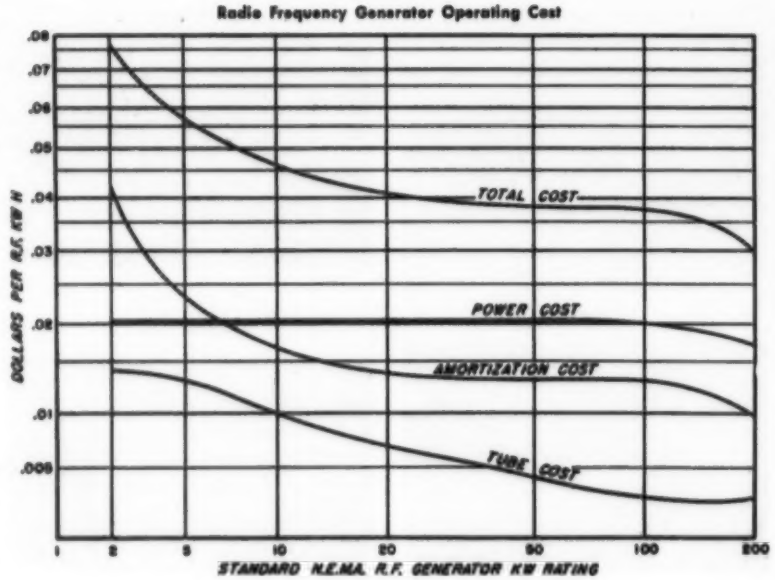


FIGURE VIII

Press and R.F. Generator for Molding Vacuum Sweeper Motor Housings

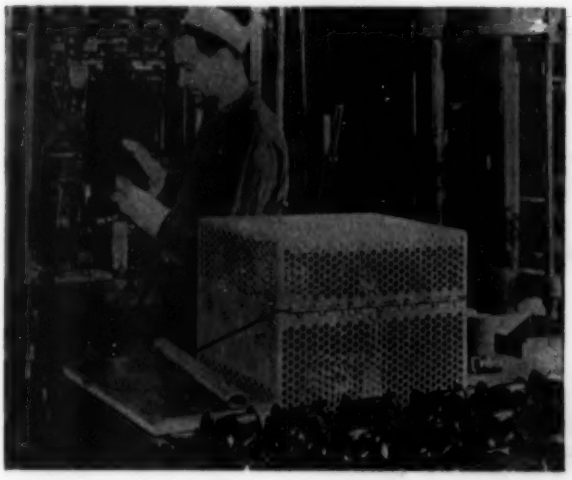


FIGURE IX

Rubber Tire Electrically Preheated for Molding

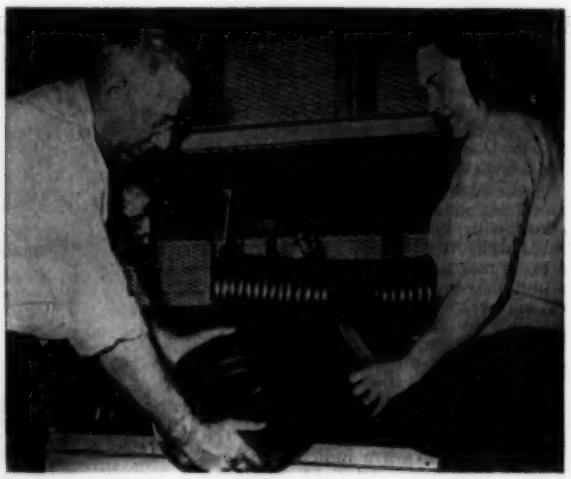


FIGURE X

Rubber Tank Tread Dielectrically Preheated For Molding

FIGURE XI

Foam Rubber Mattresses—100 kw R.F. Generator in Background

plishes savings because the panel can be used almost immediately as it comes from the press. The labor of assembling the panels in hand clamps, storing them overnight while the glue sets, and removing the clamps is eliminated.

In the drying of thick foam rubber products such as the mattresses shown in Figure XI a combination of dielectric heating to supply energy plus circulating hot air to carry off evaporated moisture performs in 15 or 20 minutes a drying job that would require about four hours to accomplish by hot air alone. Figure XII shows an installation of two drying ovens and a 100 k.w. R.F. generator. Because the loss factor of the foam rubber decreases greatly as it dries, the energy absorbed also decreases, and the process is very simple and noncritical with very little danger of overheating the product even if left in the oven too long.

Dielectric heating has been applied to some food industry processes on an experimental basis. In the cooking of meats it has not been highly successful because the loss factors of the fat and lean portions are very different and result in unacceptably nonuniform cooking unless the process is slowed down to about the same speed as conventional cookery.

Cakes and cookies can be baked dielectrically. Since the dough is heated throughout, the crust, if desired, must be added by supplementary heating with infra-red lamps. This process appears to offer some advantages because the baking time can be materially decreased.

Frozen foods can be defrosted by dielectric heating. This appears advantageous when applied on a commercial scale to one food at a time from a time-saving standpoint. There

is a technical difficulty however that the loss factor of the food increases as it is defrosted. Provision must be made to remove the defrosted portions frequently to prevent overheating.

The eggs of insect pests in dry cereals, grains and nut meats have been successfully destroyed by dielectrically heating the products to about 140° F. This process is technically very feasible but it appears to be more costly than conventional methods of de-infestation.

Some work has been done on the sterilization of foods preparatory to canning or bottling. The chief technical difficulty in this process is that a great many foodstuffs are sufficiently non-homogeneous that full advantage of the very rapid rates of heating possible by dielectric heating cannot be fully utilized without producing unacceptably non-uniform heating. There is some evidence that the electric field itself may have a lethal effect on bacteria, spores, and molds which is independent of its heating effect on the foodstuff. There are indications that some frequencies and field strengths are more potent than others. The mechanism responsible for this effect if it exists is not understood; nor is it known whether the most lethal conditions for one type of bacteria are lethal for other types.

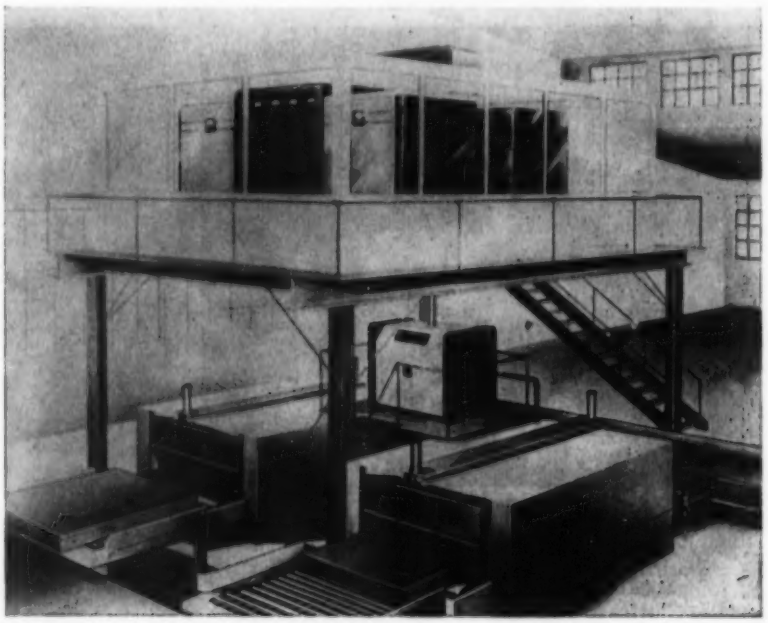
For the sterilization of foods by dielectric heating two possibilities seem to exist. One is the straight heating of the food to a high enough temperature to achieve sterilization. This is likely to be limited to fairly homogeneous substances such as ground meat; and in the near future it seems likely to be more expensive than steam heating methods unless it can result in considerable economies in handling or produce such a superior product that the product will command a premium price.

The other possibility lies in the lethal effect of high frequency fields *per se* on food contaminating organisms. The existence of such an effect is not fully established and not well enough understood to be used yet. Considerable research of the long range fundamental type will have to be done in order to evaluate this possibility fully and use it effectively.

Dielectric heating has the outstanding properties of producing heat within a material quickly, cleanly, and uniformly. The generators and applicators usually fit well into a production line, and do not degrade working conditions by producing odors, humidity, and high ambient temperatures. It seems inevitable that a tool with these attractive features will eventually find good uses in an industry as large, diverse, and competitive as the food industry. The development of these uses however will require research using the combined resources and knowledge of the chemist, bacteriologist, food technician and the electrical engineer.

FIGURE XII

Dielectric Heating Installation For Drying Foam Rubber

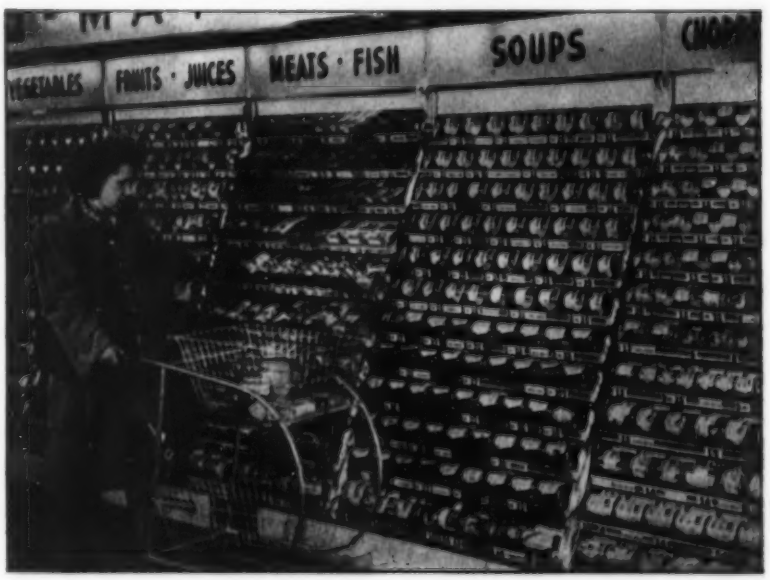


FRAUD FIGHTERS

RKO Radio Short Subject In "This Is America" Series Depicting FDA Enforcement

". . . Nowhere but in America can people buy with more confidence and more safety—thanks to the high standards set by the FDA . . ."

Scene below from the motion picture shown as the third program feature at the Canning Problems Conference.



Special Pesticide Session

EFFECTIVE PARTICIPATION OF CANNING TECHNOLOGISTS IN THE CURRENT FEDERAL FOOD AND DRUG PESTICIDE HEARINGS

**By H. Thomas Austern,
Counsel for N.C.A.,
Washington, D. C.**

It might seem a far cry from the Caliphs of Bagdad to the Federal Food and Drug Administrator—or from the Persian insect powder mentioned in the Arabian Nights to ethyl p-nitrophenyl thionobenzenephosphonate. Perhaps, too, the ancient regulation of pyrethrum—largely to keep *secret* the insecticidal properties of *C. coccineum*—is inversely reflected in the current Food and Drug proceeding to determine in a *public* hearing the necessity for using pesticides in growing fruits and vegetables, to ascertain their toxic properties both to insects and warm-blooded animals, and to fix the permitted tolerances which may be found when they are marketed. Even without a lethal dose of historical analogue, most of you are aware of these comprehensive administrative hearings which began about 10 days ago in Washington.

They arise under two sections of the Federal Food, Drug, and Cosmetic Act. Even though a light dusting of legal analysis has its own hazards, the administrative organism with which we are concerned this afternoon necessarily derives from a law enacted by Congress in 1938. Inescapably, therefore, I must deal in part with that law, I must also discuss what some of you call "lawyering." No compound has yet been devised for its eradication; and I hope that when I conclude few of you will be further encouraged toward developing an effective lawyercide.

The original Food and Drug Act of 1907, you will remember, did not provide for the establishment of tolerances. At that time the potential dangers of pesticides, then largely confined to vegetable substances such as rotenone and pyrethrum and inorganic chemical compounds, were not apprehended.

The early law merely prohibited the addition of poisonous or deleterious ingredients which might render a food product injurious to health. As Dr. Chapman told the Raw Products Conference "informal" tolerances were later provided for lead arsenic and fluorine. But these were merely *advisory*. Anyone could contest a seizure by arguing that the amounts present were not actually deleterious; and the possible over-all intake by the consumer from all sources was not considered.

About the only significant interpretation under this earlier Act was one by the Illinois Federal Court which held that the phrase "poisonous or deleterious" meant any substance that "had a tendency to destroy"—in other words, that *might* decrease—"the vitality of the human body." This would cover any toxic chemical and many other substances.

During the five-year debate that went into the making of the present statute, it was recognized that for fairer and more effective control the Administrator should be given the authority to prescribe tolerances. The feeling of Congress was perhaps best expressed in the House Committee Report. This made it clear that "the unnecessary addition of poisons" to any food should be absolutely prohibited. It went on to say, however, that

> "Where such additions are necessary, the establishment of tolerances is authorized, based upon the *practical* necessities for the use of poisonous substances."

Congress was cognizant of the scope and complexity of the problem. For the House Committee asserted

> "It is well recognized that an adequate fruit and vegetable supply could not be brought to maturity without the use of toxic insecticides and fungicides. But the situation is made extremely complex by the number of poisonous substances used for different crops in different localities, and by contaminations which unavoidably occur in many manufacturing processes."

Few could quarrel with the basic purpose of the new law which was announced

> "To insure that the total amount of poisons that the consumer receives will not be sufficient to jeopardize health. The needs of each branch of the food-producing industry can be met and the public health can be adequately protected."

On this basis the statutory framework was erected. Section 402(a)(1) prohibited, as adulterated, any food which contained any poisonous or deleterious substance which *may* render it injurious to health. That was made the basic standard.

Section 402(a)(2)—the next section—provided that a food would also be adulterated if it contained any *added* poisonous or *added* deleterious substance which is *unsafe* within the meaning of Section 406. This takes us over to Section 406 which is the authority for setting tolerances and contains the standards for fixing them.

Section 406 specifies that any added poisonous or deleterious substance should be considered *unsafe* "except where such substance is *required*" in producing the particular food, or its use "cannot be avoided by good manufacturing practice." It goes on to provide that wherever the use of a deleterious substance is required or cannot be avoided in good manufacturing practice, the Administrator shall promulgate tolerance regulations based on consideration of the public health. If the tolerance is exceeded, the product becomes adulterated under Section 402 (a)(2). If the tolerance is met, there is neither a violation of Section 402 (a)(1) or 402(a)(2).

Taking all of this together, once the regulations recognize that the use of a substance is required for production and cannot be avoided by good manufacturing practice, meeting the tolerance, prescribed in the regulation, protects the particular food from any charge of adulteration based on the presence of an added deleterious substance.

Section 406 next offers two guides for the Administrator in fixing tolerances. The first is that he shall consider carefully—in addition to determining the amount of any poisonous substance which can be tolerated—the degree to which its use can be avoided by some other means in producing the food, with the additional precaution that he should consider "the other ways in which the consumer may be affected by the same or other poisonous or deleterious substances."

This was a large order. Dr. W. B. White has described it "as deceptively simple as the celebrated instructions for making a beautiful statue. Take a block of marble and knock off all you don't want."

The first question, of course, is what is a "poisonous or deleterious substance"? On this point you may expect that the Food and Drug Administration will take, and I suggest properly, a fairly rigid view with respect to any chemical. One does not need the well-known examples of ethylene glycol or Jamaica Smoke to come to the view that on the issue of wholesomeness any responsible official must lean in the direction of an abundant and abiding caution. As Assistant Commissioner Crawford has put it, "the public cannot be used as guinea pigs."

On the other hand, canners familiar with the revised canned food standards which have sanctioned the use of calcium salts for firming tomatoes and other products, mineral salts in the canning of peas, and citric acid in vegetables, will also grant that the FDA is willing to take a realistic view of what constitutes wholesomeness.

But on any new and untried substance, ordinary prudence would insist that basic investigation of the

toxicity of any residue levels likely to be found in food must precede commercial use in any food product.

The second test, however, is more elusive. When is the use of a pesticide required? Perhaps the most famous example of entomological disaster is found in an ancient Book of wide circulation:

> *". . . and when it was morning, the east wind brought the locusts . . . over all the land of Egypt: very grievous were they. . . . For they covered the face of the whole earth, so that the land was darkened; and they did eat every herb of the land, and all the fruit of the trees which the hail had left: and there remained not any green thing in the trees, or in the herbs of the field, through all the land of Egypt."*

Even after two weeks of hearing, I am satisfied that no entomologist will be able to equal in eloquent fact that demonstration of necessity for insect control.

Yet I submit, for a purpose I shall come to in a moment, that the ultimate judgment on necessity—on whether the use of a relatively poisonous pesticide is *required*, or that it cannot be avoided by using something else—is not a scientific judgment. It is true that the entomology of the particular pests—or the phytopathology of specific plant diseases—and the damage they will wreak if unchecked, is a matter of scientific adduction. But necessity is in the end perhaps a matter of economic and political judgment.

Without the use of a particular substance, it might be possible to secure one level of yield; with its use, there might be an added increment to the harvest of only 5 percent or 10 percent. Without certin control techniques, a reasonably acceptable fruit or vegetable might be brought to harvest. With it a much improved product, of admitted better quality and of far greater economic value, might be secured. Of equal importance is the desirability of providing an adequate and balanced diet for the American public. This must include both a variety and an abundant supply of wholesome fruits and vegetables. In the end, these are all questions of degree and hence of economic or political judgment—using political in the sense of good government and a sagacious balancing of interests.

The determination of the acute and chronic toxicity of any substance is admittedly a matter of medical judgment. But even so, the final administrative determination as to which—among several claimant food products—should be permitted on the ground of necessity to carry a particular tolerance, and which are not to be accorded that privilege, requires administrative judgment as difficult as any that has to be made.

Nor are these judgments rendered any less difficult by the current situation with respect to the many newly developed pesticides. For as you know, in a very few years since 1945 a large number of new pesticide chemicals have been introduced. Many of them are new synthetic organic materials, distinctly different from the pesticides used in prior years; and some representing brilliant achievements in the direction of devising effective, yet relatively safe, insecticidal and fungicidal chemicals.

Most of you will recall that beginning in 1947, difficulties with respect to the use of some of these substances were encountered by canners. In 1948 many segments of the canning industry became concerned with this complex problem; and the uses and hazards of various insecticides were explored that year in your Raw Products Conferences. A year ago, you will recall, a large part of the Technical Sessions at the 1949 Annual Convention were devoted to the subject of pesticides, with informative papers by Doctors Lehman, Rohwer, Haller, Norton and White. To paraphrase the poet, much was given in these sessions—and it was clear much remained to be done.

In the late spring of 1949, the Food and Drug Administration announced that comprehensive hearings would be held under Section 406; and a formal Notice was issued on September 9 for public hearings to begin on January 17, 1950.

Even apart from this background, it should be unnecessary to elaborate the canning industry interest in these hearings. The canner is primarily responsible for the product he ships in interstate commerce—not only legally, but as a matter of public responsibilty. The canners' interest coincides with that of the consumer in securing the broadest protection against injury to the public health from any food product.

On the other side of the coin, the canner is as vitally concerned as is his grower with the necessity for producing, on a given acreage, the highest yield of sound fruits and vegetables—with the best available protection against the hazards of insect infestation and plant disease—and at the most economical cost feasible for an adequate and abundant American diet.

Even more, the canner is somewhat in the middle and perhaps has a wholly different stake. He may not be in a position to refuse to accept raw material which conforms to the tolerances which will be prescribed in these hearings. I should also suppose that whatever is needed to produce sound fruits and vegetables for any other kind of marketing is likewise needed to produce them for processing. As it is sometimes whimsically said, when the insect lights on the fruit for his repast—or the mite snuggles on the leaf—they are perhaps as unaware as the owner of the orchard or field whether the ultimate harvest will go to the market or to the processing plant.

On the other hand, do not assume that a formal tolerance provided for fruits or vegetables, marketed in fresh form, will automatically apply as an informal tolerance to the same fruits or vegetables in canned form. Insofar as feasible, canners will want to assume the responsibility of residue removal. Yet this is easier to say than completely to achieve, particularly with some of the newer chemicals.

For some consumer uses, it will undoubtedly be true that a higher standard for the canned product, than for the fresh, should and will prevail. Yet there remains for many products a possibly wide area calling for resourcefulness in manufacturing and commanding the highest skills in the canning art.

Accordingly, it is hardly necessary to urge upon any informed canner, alert food technologist, or responsible business management, the importance of doing everything feasible to insure that the delicate and difficult judgments which have to be made in this proceeding are based on all of the available factual information, produced by those who have it at these public hearings.

By this time, you will have discerned that inevitably I come back to the public hearing. Why? Simply because the Food and Drug Act specifies that tolerance regulations can be issued only in accordance with the statutory procedure controlling how they are to be formulated.

Some of you might have supposed that the way these regulations would be written would be by carefully assembling the data, and having it quietly evaluated by entomologists, plant pathologists, chemists, and other food technologists, who would then write the rules. Fortunately—and I say fortunately even at the risk of presumption—they are not formulated in that fashion.

What happens instead is a public hearing—with a full panoply of parties, witnesses, and inevitably lawyers—at which the *facts* must be presented more or less as they might be in a lawsuit, and each witness is fully examined.

The *record* is all important: As one man brilliantly concluded, "If it ain't in the record, it ain't so." Even if everyone knows that the Codling Moth infests apple orchards and that the Plum Curculio afflicts peaches, unless there is evidence in the record the regulation cannot provide for their control.

Moreover, the evidence in the record must also be substantial; and everyone, both professional and ama-

teur lawyers, gets a chance at cross-examining every witness.

I have called this process legislation by litigation. Dr. Cameron and Mr. Bellis have referred to it as "too much lawyering". Others have used even stronger language. May I say that this need not be necessarily so. There is no occasion for acrimony or violent controversy in what is essentially a fact finding proceeding.

May I add, however, that it is the business of the lawyer to build an adequate record. He has been trained to the job of insuring the existence of substantial evidence. Though he should take his scientific facts from the scientist, by the same token the technologist might preferably take his law and guidance on legal procedure from the lawyer.

Even though to a trained lawyer what often happens at these hearings sometimes resembles Mrs. Jones suing the Traction Company, and often to the trained scientist may appear to be a time-consuming shambles, there are many who think this hearing process, however onerous, is essential.

I hope you will agree. In the first place, as we have seen, the ultimate judgments in formulating regulations are not technological or medical but are economic and sometimes even political in the best sense of that word. An administrative judgment may still be economic and political, no matter how much technical clothing it may wear. I have already suggested some reasons why this is so even in the present proceeding.

Under our system of government these judgments must be made on the *facts*. And because they embrace not solely technological questions—but instead issues as imponderable as any in the art of government—their resolution is so often a delicate and difficult problem.

Secondly, the holding of public hearings is the only way in which cross-examination can be developed. This is an important procedural safeguard, not merely to make work for lawyers or to permit recourse to the courts, but in other important ways.

What is a fact is often a matter of opinion. Mr. Justice Holmes once observed that certitude is not certainty, and another only less famous judge cogently remarked that while he might often be in error, he was never in doubt. Perhaps this humility is not characteristic of all lawyers; but I am confident that a scientific audience such as this is cognizant of the area between hypothesis and demonstration.

With respect to rule-making under the Food and Drug Act, the spelling out of the Congressional direction is often called the exercise of delegated legislative powers. Senator Copeland is reported to have said, "You can't legislate off in a corner."

No greater protection against ill-advised or arbitrary action can be found than to require those who seek regulation to appear publicly and to articulate the facts on which action is to be based.

The open checking of these facts is essential—I might add not only for the protection of the regulated industries but to insure that the basis on which the Administrator acts is well-founded. Unless this is true, in the present instance injury to the public health might follow.

The whole legal rigmarole is built on the concept that regulations—whose violation may lead to severe fine, seizure, or even jail sentence—may not be arbitrarily or unfoundedly written; but must be based upon facts

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which have been publicly produced and subjected to the scrutiny of cross-examination. That end can be achieved only by an open hearing, and by confining the administrative decision to the tested facts of record.

In reviewing this entire process of public hearing and briefs and legal arguments on record, Charles Crawford, Associate Food and Drug Commissioner, said that he thought they

> "lead to infinitely better regulations, from the standpoint of the public and industry, than could possibly result from any other scheme."

We come, then, to your job in assisting in this process. It is because complete data must be assembled that the hearing process cannot be effectively achieved without the participation of both government and industry entomologists, chemists, food technologists, and all those knowledgeable in the growing and processing of fruits and vegetables.

Each of you has a vital part to play in this work. Each of you has an important contribution to make both to the public and to the food industry.

Perhaps I can leave with you a few suggestions—from the point of view of a food industry lawyer—as to those areas in which you may have a unique responsibility for furnishing information, and a few practical suggestions as to the technique of doing so.

In the first place, I hope that you will follow closely the comprehensive yet summary reports of the hearings which the Association plans to publish in the INFORMATION LETTER. These hearings comprehend all fruits and vegetables—and practically every insecticide, fungicide, and herbicide which may yield detectable residue levels on the harvested fruit or vegetable—as well as the necessity for the use of these substances against each and every insect pest and fungus of economic importance to the production of each fruit and vegetable.

A proceeding of this scope inevitably will take a long time. The following of it—digesting the evidence, and insuring that the relation of the testimony to processing is both clear and adequately evaluated—will absorb much time and effort by the Association staff.

An informal arrangement has been made with the Presiding Officer for the presentation of any additional evidence by the canning industry toward the close of the hearing. This will permit canning industry witnesses to have the background of the earlier proceedings, to avoid duplication of information, and to concentrate on problems more directly related to canning. When the time comes for your presentation, the services of the Association staff and counsel will be available to members of the industry.

Nevertheless, there are a number of points which at this time warrant discussion—and perhaps invite your consideration in preparing for these hearings.

In a large measure the direct responsibility for demonstrating the necessity for using particular pesticides and fungicides lies with the growers and the Federal and State entomologists who guide them through their day-to-day recommendations and vast experimental work.

But because of the great community of interest between the canner and the grower, I venture to suggest that you have a corollary responsibility in doing what you can to see to it that those who have the facts will produce them.

More directly, any information which you may have concerning residue levels found at harvest time on any fruit or vegetable used for canning will facilitate the formulation of proper regulations. In this same area, those of you who have developed—or worked with already developed—

methods of residue detection and quantitative determination, should make their knowledge and experience available.

But most directly the canners' concern is with methods of removal. The importance of this cannot be overstressed. To a large extent, it is the canning industry that knows its own processes—that knows what can or cannot be done to a fruit or vegetable without impairing its full quality utilization for canning—that has the available experience in this connection—and perhaps the direct responsibility for making full information available.

In this connection, I might mention that some representatives of the Food and Drug Administration have specifically asked that processors furnish the information as to the extent to which pesticides or fungicides can be removed by washing, brushing, or any other means.

By the same token, and apart from toxicity, any additional data as to the effect of particular pesticides or fungicides on the process or the product should be assembled. It is not yet clear to what extent these factors are relevant to the present proceeding, but it may turn out that such information will be requested.

It is as technologists, however, that you can effectively coordinate the data of your own company with that of the rest of the industry. Both mechanically and logically, the assembled information of an industry group—intelligently reduced to understandable common denominators—is often of great assistance in this work. This is particularly true in evaluating the sufficiency of sampling techniques and the reliability of testing methods. These are the areas in which the trained food technologist is most helpful.

As a practical matter, in preparing and presenting information, it is desirable that you ascertain—if possible indicate, at the least be prepared to tell—who did the work, when and where it was done, and who prepared the specific reports. The hearing rules require that 5 copies be furnished of any written materials, schedules, tables, or other data. Only undue modesty should prevent you from bringing more along, for Dr. Mahoney and Dr. Cameron, for the lawyers, and for those at the hearing who want to follow what you have to say. I would suggest at least 15 to 20 copies.

It is, of course, possible for you to furnish your information in the form of an affidavit. But the importance of cross-examination, which I have endeavored to stress, has led the Administrator to specify that in attaching significance to what you say in an affidavit, he will consider the fact that there was no opportunity to ask questions. And anyone who does not agree with your conclusions can point to your absence.

Accordingly, I hope that none of you will be reluctant to serve as witnesses in these proceedings. The public duty to assist in this important job of achieving sound regulations in this field should lead the management of any company to insure that all information, not otherwise supplied, is made available to the Administrator.

Often when it comes to public hearings, canning technologists endeavor to emulate the turtle. But in this field the importance of the task should overcome scientific reticence—and in no sense requires that you stick your necks out. Only as a witness—rather than an affiant—can you make a full contribution to the proceeding by explaining what has been done, the results achieved, and, often as important, to indicate those areas in which perhaps no reliable knowledge as yet exists.

I can promise you a not unenjoyable experience. Indeed, some have reported that it is often stimulating and occasionally educational. Everyone has agreed that it is essential.

Raw Products Conferences

THE RESIDUE PROBLEM FROM THE STANDPOINT OF THE ENTOMOLOGIST

By Dr. P. J. Chapman, New York State Agricultural Experiment Station, Geneva, N. Y.

The spray residue hearing now being held in Washington is of importance to all producers and processors of fruits and vegetables, to manufacturers of pesticides, and to consumers generally. That would seem to include everyone. What the outcome of the hearing may be cannot be forecast with accuracy since nothing of this character has ever been undertaken by the Food and Drug Administration.

It is my purpose today to review the events that have led up to the calling of this hearing, to point out their objectives and to attempt to project their possible meaning ultimately to various groups having a special interest such as your own, and to the public at large. I am speaking primarily as an entomologist. As such I may be charged with having a biased viewpoint. Be that as it may, we entomologists among other assignments have the rather considerable responsibility of devising means of protecting food crops from pest damage. No one aware of the facts will question, I believe, that insects need to be controlled. Losses from insects in all fields are currently estimated by the USDA at $4,000,000,000 annually. What this would soar to if we should suddenly be deprived of chemicals to control them is anyone's guess. But it would be enormous, probably amounting to several times the figure just mentioned. Certain crops such as some fruits cannot be brought to maturity unless protected against pest attack. And farmers generally are highly dependent on the use of pesticides to get satisfactory yields and produce of saleable quality.

While it is true that we are not entirely dependent on the use of chemicals to control pests, it almost amounts to this practically at present in the case of intensively cultivated crops such as the fruits and vegetables. Some use can be made of such control principles as crop rotation, growth of the crop at periods during the season that will avoid all or peak activity of the pest, use of natural enemies, and the breeding of varieties that resist pest attack. Good results have been obtained in the use of biological control methods in some cases. Unfortunately, chemical and biological controls do not mix very well. Thus the chemicals used are apt to prove just as toxic to the parasites as to the pests. Biological controls, generally speaking, have proved far too inefficient thus far for fruit and vegetable growers to place much reliance on them.

Those concerned with determining the public health hazards of pesticide residue include toxicologists, pharmacologists, and nutritionists. While entomologists are not directly responsible for this work, we fully realize that pest control must be safe pest control, human-wise. We are consumers, too. We have just as much interest as anyone else in seeing to it that our food sources do not contain harmful quantities of chemicals.

In cases such as the present, some persons may fall into the error of attempting to oversimplify the issues involved. Thus some may argue that if a chemical is deleterious or poisonous, why permit the occurrence of any amount of it on our foodstuffs? Excellent if possible. But rarely, if ever, may practical problems be solved with this degree of absoluteness. Thus it is pertinent to ask, are pesticide residues poisonous or deleterious in the

traces that may occur in some cases on fruits and vegetables at harvest? Scientific evidence based on the situation as it actually exists and the full weight of practical experience of all our people over the past 50 years in using such produce certainly does not supply an affirmative answer. The truth seems to be that whether or not a material is deleterious may be dependent on the quantity ingested.

In the case of insecticides and fungicides, certain ones may be harmless to man at almost any dosage level. Sulfur is a good example. With others, the practical problem is, where should the tolerance line be drawn? Quantities of toxins must not be permitted on produce at harvest that would in any way be harmful to the consumer either immediately or as a result of long continued use of such products. Entomologists have no quarrel with anyone on this point. We are concerned, however, with how low this tolerance line may be set below this safe figure. If this limit is completely unrealistic in terms of what may be unavoidable in our efforts to control pests, then we must challenge such a position. To paraphrase the saying that one cannot have his cake and eat it too: Growers cannot be expected to produce food in the quantity and quality our economy requires if they are deprived of one of the most potent means of achieving this end.

Suppose we review briefly the events that have led up to the calling of the present hearing. The proper starting point, I believe, is the enactment of the Food and Drug Act in 1906. Under its provisions any article was considered adulterated if it contained *any* quantity of a poisonous or deleterious substance. No differentiation was made between spray residues and any other kind of adulteration. No action was taken by the Food and Drug Administration on spray residues, however, until the late twenties when an arsenic tolerance was established for apples and pears. Lead and fluorine tolerances were set up later.

This was an unhappy period for all concerned. Growers in most areas found it necessary to wash their fruit and this proved to be a costly operation, often resulting in the lowering of the market value of the crop. Growers complied with the regulations pretty well but rebellion was in the air. That the initial tolerance figures were set too low is evidenced by the fact that they were later raised.

The FDA is holding the present hearing under authority granted them under an Act passed in 1938. This legislation recognized, for the first time, the necessity for using added poisonous or deleterious substances in the production of food—presumably meaning insecticides and fungicides—and provides for the F.D.A. to set up tolerances. The current hearing represents the first comprehensive testing of the spray residue provisions of the law.

The need for action now was no doubt largely created by what one might call the DDT revolution. Following the discovery and use of this material during the war, we have witnessed a phenomenal growth in the development of new pesticides. Gains in pest control have been enormous and future prospects are bright. It is not without its ironical aspects, however, that DDT which so recently has been acclaimed as one of the all-time boons to mankind should now be on trial as a possible health hazard. *Sic transit gloria.*

Suppose now we examine the objectives of the hearing. I am confident most of you have had an opportunity to read what the FDA propose to accomplish through their official statements. Their general objective is to protect the consumer against the occurrence of harmful quantities of pesticidal residues on fruits and vegetables. This is clearly in the public interest. And it is the duty of everyone concerned from whatever point of view to cooperate to the fullest with the FDA in this undertaking. Only in this way can both safe and fair tolerances be evolved.

Well, it's fine to have a goal. But in this practical world there are usually important difficulties to resolve before we can even approximately attain our goals. I should like to point out some of the difficulties in the present case.

The law enacted in 1938 permits the use of deleterious or poisonous materials on foods, within limits, where *the necessity for their use can be established.* It is not clear how much of this necessity-for-use condition is directed at insecticides generally or to each one separately. If generally, then this seems like a strange requirement considering the fact that pesticides have been used rather intensively on fruits and vegetables for the past 40 years or more. I realize that it may be necessary for the FDA in carrying out the provisions of the 1938 law to get such evidence in the record. But obviously farmers are not paying out many millions of dollars for these products annually for any reason other than that they consider it necessary to do so. Regarding the possibilities of grouping currently-used pesticides into two categories—those that are necessary and those that are not—may not, in my opinion, prove very fruitful of results.

The public generally is not fully aware of the fact that one of the chief reasons growers find it necessary to spray and dust so intensively is to provide consumers with the kind of high quality product they have come to expect. Such products must be essentially free of insect and disease damage and graded to size, color, etc. This whole matter is closely regulated by rigid grade and purity standards. Furthermore, this is a highly competitive field and fruits and vegetables vie with each other for the consumer's dollar. Each one must maintain high quality standards to remain in the picture. So if we want to have high class foods and all of us do, I think, then our growers will have to use pesticides intensively—and thus possibly incur a residue problem as a by-product—so that he can get satisfactory yields of a high quality product, so in turn he can sell his goods at a sufficient profit to stay in business.

Now that the Food and Drug Administration has decided to review the pesticide residue situation, I believe similar action would be desirable on the handling of the traces of insect contaminations that may occur in some processed foods. The two problems are similar and are interrelated. For often the only way of completely eliminating infestations in some crops at harvest is to carry out an intensive insecticidal program in the field. No one wants any relaxation of basic purity standards, least of all, the food processors. But purity in practical matters is a relative condition. Thus, I believe, consumer acceptance is pretty much the same whether the fruits or vegetables are processed, are purchased as fresh produce in the market, or originate in the home garden. One will get satisfactory, nutritious foods from all sources. But you know and I know that standards of purity are much the highest in the processed foods and lowest in home garden truck. This being the case, it suggests that any overzealous dealing with the question in processed foods is like "straining at gnats and swallowing camels." Should it ultimately prove feasible for the FDA to set up standards in this field comparable to the spray residue tolerances, then I think a distinction should be made for insect contamination associated with the growing of the crop and those originating as a result of unsanitary conditions in processing.

Many of us who have a special interest in the hearing are concerned over the possibilities that exist for the imposition of restrictions that extend beyond what many believe are the true functions of the FDA in this matter. Wide discretionary powers are accorded the Administration under current laws. Their specific job would appear to consist, however, of determining what are the safe tolerances to allow for various pesticides and then to enforce such rulings. But it is not quite that simple.

Thus there may be a desire on the part of the FDA to establish tolerances on as small a number of pesticides as possible. This is an understandable position for them to take. However, such a policy would be unfortunate in my opinion. I believe any material should be in effect cer-

tified for use as soon as it can comply with safety requirements. Only in this way can we entomologists be assured of having a sufficient number of products to cope with the varied, complex and dynamic operation that modern pest control has become. Selection of a pesticide for use is based on many factors: The crop, the pest or pest complex present, cost, availability, population level of the pest, climatic and weather conditions, plant tolerance considerations, compatability with other material combined in the treatment, possible spray residue complications, etc.

We need a variety of products to fit these conditions. And because we are not dealing with a static problem, we need a steady flow of new and better pesticides. You are aware, I feel sure, that insects and mites are able to develop resistance to pesticides. Thus we are no longer able to control houseflies with DDT in certain areas. And now mosquitoes are showing a similar response. This is just another manifestation of why these creatures are such successful inhabitants of this earth. Collectively, insects display a remarkable capacity to adapt themselves to changing conditions, whether such changes are in the form of toxicants that occur on their food, climatic changes or others. After all, this is their world, too!

Mention already has been made of the fact that the establishment of lower tolerances than are really necessary may impose hardship on the grower. Pest control requirements may vary widely from year to year for the same crop and locality. The weather accounts for much of this situation. If residue tolerances are allowed to dictate the control program too rigidly, heavy insect damage may result from having to stop spraying or dusting too soon. Similar difficulties may arise by using lower dosages of toxicants than will give optimum control. Another danger of using weak dosages is that this may create a condition which might give rise to strains of the pest that become resistant to the toxicant.

In view of the foregoing, I believe every thinking person will agree that research in the development of new pesticides is of paramount importance. Herein lies our chief hope of ultimately solving this toxic residue problem. In a way, considerable progress has already been made in this direction through some of the newer materials. Usually these are more potent as insecticides and break down more rapidly than is true of older materials. Both of these properties may be highly advantageous in meeting the residue problem; one can use them at lower dosages initially and, with care, essentially none of the material may persist to harvest. Efforts should be directed toward finding materials that exhibit greater differential toxicity to insects and man. It should be possible eventually to find products that are highly toxic to pests and relatively harmless to man. I know the FDA would not wittingly want to create a condition that would stifle pesticide research. However, the following of a highly-restrictive policy on the establishment of tolerances, especially on new materials, could operate in this way.

There is a need now and the need will probably become more acute as time goes by for greater speed in the determination of the possible health hazards of pesticide residues. Some authorities believe it should be possible to gain sufficient indications within 12 months' time. Whether or not this is true, it may be feasible for the Administration to hand down at least provisional tolerances to permit the conduct of large-scale field experimentation or similar limited use. Under this plan, one would have to wait for further pharmacological evidence before general use of the product would be permitted.

The possibilities of using bio-assay techniques should be explored; that is, the use of mosquito larvae and similar organisms. Considerable exploratory work has already been done in this field. Bio-assay techniques are rapid and very sensitive. They might be highly useful in gaining tentative ideas on new materials and be a valuable substitute for or a check on a chemical analysis, especially in cases where satisfactory analytical methods are not available.

By way of summing up, I should like to offer some proposals on this spray residue problem for your consideration.

1. We should fully present our case before the current hearing. Future regulations will be based on the facts that are put into the record here. Any group will have itself only to blame if important facts affecting the welfare of its activities are not presented for consideration.

2. Research on all phases of the problem should be pressed and fully supported.

3. We should urge the adoption of safe pesticide residue tolerances—but also realistic ones, in relation to pest control needs.

4. We should recommend to the Food and Drug Administration that tolerances be established on as wide a variety of pesticides as possible.

5. We should support any efforts designed to expedite the establishment of tolerances on new materials as they are introduced.

6. Purity standards for insect contamination in processed food should be reexamined for possible ways of avoiding pesticide residue complications, consistent with purity.

7. Finally, each of us should consider this problem more often in its entirety and not so much from the viewpoint of our special interests alone. We have a common problem to solve. The Food and Drug Administration, the farmer, the medical profession, the food processing industries, the pesticide manufacturers and the various sciences that serve agriculture, all contribute in important ways to the health and economy of our nation. No group can expect to do exactly as it pleases. Compromises will have to be made. We should finally appreciate that some control and regulation of this problem are needed.

FEDERAL-STATE GRADES AS A METHOD FOR PURCHASING TOMATOES FOR PROCESSING

The USDA Viewpoint Regarding Inspection of Tomatoes for Grades

By M. W. Baker, Fruit and Vegetable Branch of PMA, U. S. Department of Agriculture

Our viewpoint as to the need and desirability of the inspection of raw products, particularly tomatoes for processing, has not changed since the issuing of our first standards for this purpose in 1926. At that time we stated in the preface of the grades, in part: "Such grades must recognize variations in commercial value and still be simple enough to be practical in operations.

"The application of these grades requires the services of private or official inspectors. Such inspectors must be capable, efficient, and, above all, they must be absolutely neutral.

"Buying and selling on grade will encourage better production and better handling. The practice of paying a flat price for everything which is accepted discriminates against the best growers. The grower should be paid a suitable premium for stock of high quality which will make a high quality manufactured product. Such stock can be canned at a minimum cost. On the other hand, there should be a suitable penalty for the delivery of culls."

Undoubtedly competent growers and processors agreed with this thinking, as the request for this type of inspection service has had a phenomenal growth. Our viewpoints have changed in many respects. New methods and procedures have been tried, some of

which we have found desirable while others we have discarded. We are constantly searching for ways and means of reducing the elements of human error which are difficult to avoid in all grade determinations of this character.

When I was asked to participate in this panel and express our views on this problem, I accepted with pleasure because I have found that frank and open discussions furnish excellent machinery for the improvement of our grading and inspection service. In order to conduct this discussion along these lines, it is obvious that there should be no hedging in our statements, some of which may appear caustic but are not meant to be personal or offensive. I can assure you that the only motive in anything I shall say is to find the best method of insuring the continuation *and expansion* of the best service possible for growers and processors of agricultural crops.

Errors have been made by the Inspection service, the growers, and processors. Each must assume some measure of responsibility for them. Any attempt to do otherwise would make our meeting futile and would hamper, rather than encourage, improved operations.

The criticisms which are most commonly received are:

(1) Lack of uniformity in grade determination;

(2) Difficulty in securing service;

(3) Cost of service;

(4) Need for amending standards, particularly as to color requirements; and

(5) Unsatisfactory personnel.

Uniform grade determination is dependent largely upon thoroughly trained and competent inspectors working under adequate supervision, and inspections based on truly representative samples.

We receive more complaints of this nature when growing conditions and the quality of the crop are irregular within given areas. For over 15 years we have conducted inspectors' training schools in all of the large producing areas prior to the opening of the season.

Every effort has been made to give all inspectors detailed instructions and training. This work is conducted under our cooperative federal-state agreements, and there have been occasions when it has been difficult to secure personnel sufficiently ahead of the active season to give them the training desired.

Conferences of all supervisors are held prior to the inspectors' training schools to be certain that the different schools will issue their instructions uniformly.

During the season the work in the various areas is checked by district and national supervisors. Regardless of the training or supervision inspectors receive, if the samples upon which the inspection is based fail to be representative of the entire lot, the grade report is inadequate. Difficulty in maintaining uniformity has been traced to this source. It is more pronounced at loading stations where large loads are delivered, making complete sampling almost impossible unless part of the load is removed.

This past season at some of the stations where trouble as to quality was very severe, arrangements were made to have entire loads made accessible. The U. S. No. 1's dropped from 15 to 50 percent, varying with different loads, in less than 10 hours. At the same time, loads going to other stations where only the top portion was made accessible, showed little change.

Many charges of lack of uniformity of inspections were made in this area, whereas the crux of the problem was inadequate sampling.

In the light of these developments we have now, in fairness to all, adopted the policy that no inspections will be made or certificates issued on loads unless the entire lot is made accessible for samples, except in cases of emergency, and then only with the full understanding of both grower and processor that the certificate applies only to the accessible portion of the load.

Most of the complaints as to inability of securing the service occurred during and shortly after World War II. During this period much difficulty was encountered in meeting the demands for inspection personnel. Many of our best trained men were in the military service, and at the conclusion of the war, housing and transient living costs were so high and housing was so difficult to secure that our older and better trained men were very reluctant to leave their home States. This situation has improved materially, and our force is now better able to meet the demands and needs of the industry.

The cost of the work is tied in closely with the average cost of living. Practically all inspectors are dependent upon local accommodations. In the majority of states the work has to be self-sustaining, and fees must be high enough to cover such costs. In general, the rates assessed are not out of line with the work performed, particularly in view of its seasonal aspect.

Under present conditions it is not likely that any reductions can be made. As a matter of fact, the rates charged are generally much lower than if assessed on a carlot basis as is done on most other types of fresh fruit and vegetable inspection.

Very few standards have ever been issued that did not require amending from time to time. We have received frequent complaints relative to color requirements and damage by worm injury as set forth in the present tomato standards, both for canning and tomato products.

A research project was started last season under the Research and Marketing Act to analyze thoroughly the standards and to determine their relation to those of the finished product. At least one and possibly two more season's work will be necesary to be assured of the correct findings.

Without doubt, the one subject on which we have had the fewest complaints but which in sum total has caused the most difficulty, has been unsatisfactory personnel.

Our present shipping point force numbers approximately 3,000 people. Of this number, approximately 1,500 are utilized on our cannery tomato work.

During the war period and shortly afterward, we were forced either to decline the service in many areas or meet the demand with the best help obtainable. We took what we could secure and struggled through. Some feel that we should have declined to furnish service except where we had competent help available. Whether we should have or not, the fact remains that far too many errors were made, and we must now battle to correct their effect.

During this period processors were interested primarily in volume, and the market for their product was such that they could absorb far more loss in moving a lower quality raw product through their plants than would be possible under more normal business conditions.

During the past two years conditions have changed. Processing plants cannot afford to accept low grade raw products and stay in business. Production costs to growers have remained high. They recall the quality of stock previously accepted by the processor and see no reason why they should not have it accepted now.

One can hardly criticize a grower for being skeptical when his loads showing 20 percent and even higher of culls were accepted by a plant two or three years ago, and now the same plant rejects loads showing 10 percent.

Neither can one criticize the processor or grower for wondering what is wrong when an inspector will grade a load and report 40 percent No. 1's, and another inspector grade the same load and report 50 or 60.

These occurrences have all taken place. We have made some progress in correcting them insofar as inspection is concerned. Frankly, we expect to reduce inspection errors to the minimum the coming season. However, only by full cooperation on the part of the grower and processor can we secure and maintain maximum efficiency.

FEDERAL-STATE GRADES AS A METHOD FOR PURCHASING TOMATOES FOR GRADES

The Canners' Viewpoint of the Value of Purchasing on a Graded Basis

**By E. W. Montell,
Campbell Soup Company,
Camden, N. J.**

The following is an attempt to present for our consideration the viewpoint of some of the canners in the United States who have used federal-state inspection as a means of grading tomatoes as they are received at their plants. However, being somewhat familiar with the characteristics of canners, I do not presume to speak for all of them in this matter. There are enough of the species present, so Dr. Mahoney and I have asked several to express their views at the conclusion of this talk.

Since the early '30's, an ever-increasing number of food processors have adopted the U. S. Grades as a means of obtaining their raw tomato requirements. Very few canners have forsaken the U. S. Grades once they have been tried. This trend then indicates that many canners and growers accept this medium of purchase as being the most acceptable. It does not mean, however, that either canner, grower, or federal authorities believe that it is perfect or that it cannot be improved.

The purpose of this meeting, as we see it, is to discuss some of the problems surrounding federal-state inspection of tomatoes and to endeavor to make constructive suggestions to one another so as to improve the service. If we were to say, "Let him who is without sin cast the first stone," no one could speak because there are sins of omission and commission on both sides of this issue. If we recognize this fact, it will be easier to adjust some of the difficulties.

M. W. Baker is well known to most of us and we are fortunate in having one of such zeal and earnestness at the head of the federal department under whose jurisdiction federal-state inspection of fruits and vegetables is placed. This can be said of the state directors of markets, the supervisors, and a vast majority of the inspectors. They want the service to fulfill its functions properly.

Certainly the majority of the canners and their employees seek only to have the tomatoes which they purchase under U. S. Grades graded uniformly according to the rules laid down in the grade specifications.

What, then, are the troubles? Unfortunately, some intangibles, such as human behavior, selfishness, intolerance, fear, etc., creep into the affair and it becomes far more complicated than it would appear on the surface. Inasmuch as we are supposed to present the canners' viewpoint, suppose we enumerate some of the faults of the grading system as they appear to us:

1. Inexperienced graders
2. Lack of supervision
3. Lack of uniformity of grade interpretation
4. Ambiguity of rule definition
5. Poor sampling

1. We realize that during the war it was impossible to obtain sufficient men of the type needed for federal-state inspection. However, this situation should not exist now and we suggest that the grading personnel be selected with extreme care, trained more thoroughly, and that those who prove themselves unqualified be transferred to other work or let out.

2. We don't agree altogether on the word "supervision," perhaps we are not familiar with all of the details involved under supervision. Nevertheless it appears to us that the inspectors are not checked as often as should be and that sometimes the supervisors need checking also. The present system of visiting the graders periodically seems inadequate. It is our belief that the inspectors should be rotated and changed several times during the season and passed through a central checking station or school while being rotated. There seem to be some complications about changing graders from one state to another, but we are of the opinion that these difficulties can be overcome and, therefore, suggest that some inspectors be interchanged between areas.

3. There appears to be a lack of uniformity in grade interpretation. New Jersey seems to differ from Pennsylvania, Pennsylvania seems to have different ideas than New York, and Indiana and Ohio have long been at odds. This would seem to be a matter for the higher echelon, namely Washington, to straighten out. As far as differences as to color are concerned, we believe that these can be solved by the proper use of the Hunter colorimeter. If proper samples of the inspector's work are obtained, this machine will tell if his number ones provide puree in the number one color range and if his number twos are in the number two range.

4. Ninety percent good red color and two-thirds good red color, as described in the U. S. Grade rules, are ambiguous and subject to different interpretations. We have no suggestions as to change of wording, but it is suggested that recent studies at the canning plants be continued to ascertain what sort of product various combinations of U. S. No. 1 and U. S. No. 2 tomatoes make and that grades be changed, if necessary, so that the canner will be able to correlate grades with quality of raw product which he is receiving.

5. No inspector can render a proper verdict if the sample which he grades is not representative. The canner is accused of not providing adequate facilities for proper sampling but we have also seen evidences of very careless selection of samples on the part of inspectors.

We, as canners, must confess to a certain negligence. We are not as familiar with the grades as we should be. In times of scarcity it has been said we are sometimes willing that the grades be higher than they should be. We have been guilty of not providing ways of taking proper samples. This encourages load stacking. These things undoubtedly hamper the service and encourage distrust on all sides, as said before, "Let him who is without guilt cast the first stone."

The consumer is voicing her preference now at the market place and this, of course, means emphasis upon quality. We are, therefore, naturally becoming more interested in quality—as one step in this direction we ask for improved government grading. It can be improved but only if we are sincere and cooperate to the fullest degree to help make this service function in its proper sphere.

THE BREEDING AND DEVELOPMENT OF PEA VARIETIES FOR PROCESSING

**By Dr. J. C. Walker,
Agricultural Experiment
Station, Madison, Wis.
—Discussion Leader**

Peas have been the subject of breeding for centuries. In the 1860's Mendel started off the foundations of genetics by pointing out that certain characteristics of the pea plant were inherited in a definite pattern. He laid down important laws based upon mathematical calculations which were buried from view for another 40 years. Beginning about 1900, the science of genetics built up rapidly, and increasingly plant breeders made use of the new facts which geneticists brought to light.

Thirty years ago the pea canning industry was based upon the use of three or four varieties. The acreage was divided almost equally among

Alaska, Admiral, and Horsford. Davis Perfection then came into the picture, and largely replaced Admiral and Horsford. Breeders and seed growers were concerned primarily with the elimination of rogues and in the maintenance of stocks. We might refer to this as the "rogue period." Canners' demands for the elimination of the rogue led to a period of refinement which consisted largely in pure-lining standard varieties. A point was reached where some canners believed that varieties were too highly refined. For example, Alaskas were uniform but they were too short to stand the rigors of variation in climate and soil. About that time pea wilt appeared and threatened the industry in Wisconsin and in many other locations. Breeding for wilt resistance took the stage and it was found that the principle laid down by Mendel could be relied upon to quickly and satisfactorily settle this problem. This was due to the fact that wilt resistence was early shown to be controlled as a single factor.

Consumer demands were changing. The housewife was not satisfied with one or two types of peas in a can. The requirements called for more kinds of peas in the can and varieties adapted to a wider range of growing conditions. These necessities were registered in the shift in objectives of pea breeders and we moved into the present era. This is characterized by the synthesis of new varieties to meet ever-changing needs and requirements from the standpoints of consumer preference, processing and growing.

Dr. Mel C. Parker of the Galatin Valley Seed Company and Dr. Floyd Winter of Associated Seed Growers went into some detail in pointing out how the present-day breeders go about meeting these needs. It is no longer possible to find these characteristics and fix them in a new variety by selecting among the relatively small number of varieties that are now used in the canning trade. It is necessary to examine what the breeders call germ plasm from all possible sources of peas whether or not they are presently desirable or undesirable for canning.

The breeder in his inventory has not dozens but hundreds of lines of peas that are produced as the result of cross-breeding of a great variety of types. Most of these are of no use in their present state but each has one or more desirable characteristics which may some day be useful. As canners' requirements change the breeder takes such stock materials off the shelf and throws them into the synthetic process. We have made a great advance in the very fact that companies in seed production are lining up this reservoir of materials quickly available for breeding purposes. It obviates the necessity of

Panel Members: W. D. Enzie, General Foods Corp., Albion, N. Y.; T. T. Hopkins, Rogers Bros. Seed Co., Idaho Falls, Idaho; M. C. Parker, Gallatin Valley Seed Co., Bozeman, Mont.; Earl J. Renard, Canners Seed Corp., Lewisville, Idaho; Merl W. Stubbs, Crites-Moscow Growers, Inc., Moscow, Idaho; and Floyd L. Winter, Associated Seed Growers, Inc., New Haven, Conn.

stopping to hunt for such materials in the remote parts of the globe when they are needed. Of the various characteristics which enter into the requirements of a variety are such things as range of maturity, sieve size, determinate or indeterminate in growth, color and processing quality.

While this intensive breeding program is going on in the background of each seed company largely out of sight of the canner and freezer, the question often arises as to whether the breeding operation should not be going on in localities where the eventual new variety is to be used. The first answer to this is that there are many variations between localities within states and between states that to carry this out would be physically impossible. Geneticists and breeders know that whereas climate and soil influence the expression of characteristics which the germ plasm controls, it does not greatly influence the germ plasm itself. Therefore, most concerns adopt the policy that the best place to do the hybridizing and the initial steps in selection is where they can be done most effectively from the standpoint of the operations themselves. However, as the new varieties are being synthesized by further selection and elimination, there comes a stage when adaption trials are essential. These need to be carried on in a variety of locations so that the selection of individual plants, lots, and blocks leading eventually to strains and varieties can be carried on under the play of the environment in which they eventually will be used. T. T. Hopkins of Rogers Brothers Seed Company and Dr. Merl Stubbs of the Crites-Moscow Seed Company spoke to these points.

Emphasis was laid particularly by Dr. Stubbs upon the importance of maintenance of stocks. All of these steps in pea improvement are expensive. There is necessarily a balance that must be drawn as to the relative amount of emphasis to be directed toward the various steps. The final step of breeding operations is always the maintenance of planting stocks which are used to produce those crops that are delivered to the processors. It was pointed out that some three decades ago most of the attention was paid to rogues and maintenance of stocks. As it became evident that this was not effective without an underlying breeding program, more emphasis and expense was devoted to synthetic breeding. Dr. Stubbs pointed out that we must not pinch in attention or devotion to maintaining stocks of standard varieties. To do otherwise would quickly dilute and eventually lose the fruits of the breeding work.

In any necessary curtailment of expense in the years ahead it should not be forgotten that a large keystone in the maintenance of the industry is the preservation of the stocks and varieties already at hand.

Dr. W. D. Enzie of General Foods, who has had long experience in both pea breeding and pea variety evaluation, detailed some characters that have come to have importance as a result of 20 years of evaluating many stocks, strains, and varieties. He pointed out that in the early varieties we are most likely to retain the determinate vine type but in the late maturing varieties it probably is necessary to get along with the best indeterminate types that can be had. In the mid-season varieties there has been a general tendency to choose determinate vine types. He also pointed out that there may be some advantage to give consideration in the future to indeterminate types in this group.

Other characteristics emphasized were: (1) Excessive stipule development should be avoided since it is correlated with the tendency to vine matting; (2) stem rigidity is desirable; (3) clustering of blossom; (4) pod plumpness; (5) berry shape; and (6) berry color.

There was little or no time for questions from the floor and for general discussion. The panel members are to be congratulated on their success in bringing before this canner group a comprehensive picture of pea breeding operations, as well as procedures and objectives. One thread which ran through the entire hour's discussion was a realization of the fact that consumption of processed peas may be expected to increase in proportion to the ability of the industry to provide kinds of finished product that meet the ever-changing tastes and requirements of consumers. These requirements can be met by breeders largely as they are made conscious of needs. It is not sufficient to have peas on the vine that meet such needs. They must also be adaptable to processing and must be profitable to the grower. By the integration of breeding and processing and marketing, this industry has in the past always had a forward look. It is still looking forward.

THE BREEDING AND DEVELOPMENT OF LIMA BEANS FOR PROCESSING

By Dr. Roy Magruder, Agricultural Research Administration, USDA —Discussion Leader

Panel Members: W. D. Enzie, General Foods Corp., Albion, N. Y.; W. A. Huelsen, Illinois Experiment Station, Urbanna, Ill.; G. P. Lippincott, J. H. Dulany & Son, Fruitland, Md.; Mark H. Mitchell, The Larsen Co., Green Bay, Wis.; and Floyd L. Winter, Associated Seed Growers, Inc., New Haven Conn.

Approximately a hundred participated in an active discussion covering the objectives desired in lima beans for processing purposes and in an evaluation of existing varieties.

It was the unanimous opinion that any new varieties for processing purposes—whether for canning or freezing—should have genetic green cotyledons, a green seed coat but as early in maturity as Henderson and as uniformly productive. New varieties should also contain as much resistance as possible to blossom drop at high temperatures, rotting of the seed in cold soil, and to diseases such as downy mildew, anthracnose, stem blight, rhyzoctonia and other diseases which may become serious.

It also was concluded that resistance to nemotodes might make possible the expansion of production into areas where this pest now prohibits the profitable production of this crop. It was pointed out that the high quality of the Fordhook variety was correlated in its progeny with the thick shape of the bean. Flat seeded types do not have the high quality of Fordhook so it will be necessary for the buyer and consumer to accept the thick shape if they wish the high quality of Fordhook.

THE BREEDING AND DEVELOPMENT OF SNAP BEANS FOR PROCESSING

By Dr. W. J. Zaumeyer, Bureau of Plant Industry, USDA —Discussion Leader

The discussion was limited to recent accomplishments and future objectives in the breeding of new snap bean varieties. The members representing the seed industry and the other plant breeders discussed their new developments in processing beans. The processors dwelt on the evaluation of these new developments with respect to adaptability, disease resistance and quality after processing.

Mr. Hopkins mentioned the widespread nature of virus diseases of snap beans and related what his company is doing in breeding varieties resistant to several of these. The two varieties which recently appeared in their new 1950 catalog — Idagreen Refugee and Slendergreen — also a Refugee type, were described. It was brought out that Idagreen is resistant to common bean mosaic. It is darker podded, more upright in bush habit, and easier to pick than the present Refugees. Slendergreen, which is also similar to Idagreen, has similar horticultural characteristics, but is not resistant to common bean mosaic and hence was not recommended for areas where this disease is widespread. Mr. Hopkins also brought out the need of breeding curly top resistance, a virus disease which is carried by a specific leaf hopper which is extremely serious in certain years in some of the seed producing regions of the West. This disease is of no concern in the processing areas of the Midwest and East, but in spite of this, resistance is necessary for the seed-growing areas of the West. He mentioned the extreme susceptibility of some of the newer high quality varieties to this disease.

Dr. Floyd Winter of the Associated Seed Growers stated that the public is demanding highly artificial types whose pods possess no fiber, no strings, and no seed. With the development of higher quality beans free of fiber and with thick pod walls, the matter of threshing the mature crop for seed purposes has become extremely difficult. As a result, it is becoming a real problem to thresh such varieties and retain high germination standards.

He briefly discussed a new introduction of theirs known as Tenderlong No. 15, which is very similar to Tendergreen but, in addition, possesses resistance to common bean mosaic. Besides resisting this disease it is also resistant to the New York 15 virus, a strain of common bean mosaic, as well as the pod mottle virus, a recently-described disease which may become more widespread in the future. If this becomes a reality, varieties not possessing resistance to it may be seriously injured.

He remarked that a number of years ago New York canners wrote out certain specifications for a bean which they desired for processing purposes. These specifications were that the pod have a dark color, no color in the suture, small seeded and with a white seed coat. They set about to produce this bean and several years later introduced the variety known as Medal Refugee, which had all of these characteristics but, unfortunately, was extremely susceptible to root rot. Where this variety was planted on land containing the root rotting organisms, the plants suffered considerably.

He also discussed the Ranger variety, one of high quality having white seeds but not being determinate in bush habit. His report indicated that in the Rio Grande Valley of Texas it was performing in an excellent manner and producing extremely large yields. The last variety he mentioned was Flight, a variety identical with the old Keeney's Stringless Green Refugee but possessing resistance to common bean mosaic.

Mark H. Mitchell of The Larsen Company stated that in their tests during the past several years Rival, a USDA introduction similar to Tendergreen, performed in an excellent manner for them under their conditions. Although Topcrop, another USDA introduction, produced slightly better yields and was a little darker green in color after processing, it did not have quite as high quality as Rival. Under their conditions Ranger did very good and was excellent in color and yielding ability, but was difficult to pick because of its indeterminate habit of growth. He particularly stressed the need of a mechanical bean harvester and expressed his belief that one would be perfected within a reasonable length of time. With the introduction of such a harvester, the bean varietal picture may change considerably, since only high yielding varieties with a concentrated pod set will be adapted for this machine. In other words, most of the present varieties and especially those with an indeterminate growth habit, such as the Refugee varieties, may no longer be popular. Mr. Mitchell stressed that future beans should have no fiber, very little seed, definitely no strings, and no hand labor should be required for picking. The type represented by Ranger with a determinate growth habit would be ideal. He stressed that pod color should be darker than the present Refugee varieties and the seed size somewhat smaller. Another variety which he briefly discussed was an early Refugee type which was developed by Dr. J. C. Walker of Wisconsin and which produced 50 percent of its total yield in the first picking.

Regarding lower germinations which are reported for certain of the newer high quality varieties, he was of the opinion that the seed industry should do everything possible in improving harvesting and handling methods to reduce seed injury. He felt that this was the seedsman's responsibility. He pointed out that in spite of lower

germinations the new disease resistant varieties such as Rival and Topcrop were outyielding many of the standard varieties.

Dr. W. D. Enzie of General Foods Corp. stressed certain specifications which were needed in new bean varieties for processing. With respect to bush varieties he felt that any future development should be erect, vigorous and determinate, and sprawling types should be avoided. For the pole varieties the newer type should also be vigorous and tenacious climbers. Weak climbers or those which tend to develop auxiliary side shoots should be avoided. With respect to foliage he felt that color was not too important but that it should have relatively smooth texture, preferable to rugose types which might have a greater degree of protection for aphis. The bush varieties should have high initial blossoming spurs; excessive concentrated and intercross branching habit should be avoided. Absence of these characteristics encourages development of straighter pods and facilitates picking. Regarding bearing habit, the breeder should strive to obtain types with greater clustering habit, both in the bush and pole types and increase concentration of pod set. Long side branches should be avoided since they encourage ground contact and excessive pod curvature.

Regarding pod shape, round pods are still preferred. Crease-back types are frequently associated with puffiness, flabbiness, and large seed cavities, particularly when grown late in the season. They are not objectionable from the appearance standpoint as cut beans in the can or frozen package, if not of extreme type. Plump ovals are not objectionable if not in excess of four or five percent. Extreme ovals or distinct flats in excess of one percent may be unattractive in the frozen pack. Flat pods are not usually acceptable for processing, except for the French-style frozen pack. Some consider cut flat beans used in mixed vegetables attractive. Flats for frenching have been criticized by some on the basis of raw material lost due to pick-out of unsliced halves.

Straightness of pod is of paramount importance to harvesting, rapid snipping, and uniformity of finished cut product. The color of the pod should be deep brilliant green, which is highly desirable for frenching. Dark dull greens and those which tend to lighten coincident with increasing maturity should be avoided. As for texture, absence of string is definitely necessary. Absence of fiber insofar as possible without creating a difficult threshing problem is of utmost importance. The breeder should search for material with low fiber content but with greater tensile strength at the dry stage.

The character of the skin of the pod may be reflected in degree of sloughing after cooking. The factors for this character are not well understood but they may be due to maturity, genetic factors, or both.

Panel Members: W. D. Enzie, General Foods Corp., Albion, N. Y.; T. T. Hopkins, Rogers Bros. Seed Co., Idaho Falls, Idaho; G. P. Lippincott, J. H. Dulany & Son, Fruitland, Md.; Mark H. Mitchell, the Larsen Co., Green Bay, Wis.; H. M. Munger, Cornell University, Ithaca, N. Y.; and Floyd L. Winter, Associated Seed Growers, Inc., New Haven, Conn.

Regarding seed color, beans with colored seed coats frequently impart an undesirable color to the canned liquor, and produce an unattractive appearance in the French-style frozen pack. This is most pronounced in the large sieve sizes. It is desirable to have as much white as possible in the seed with sufficient eye coloring for ready identification by seedsmen. Particular attention should be paid to good physical characteristics, such as absence of seed coat splitting, cotyledonary abnormalities, and cavity about the embryo. High seed production potential is a necessity.

Dr. H. H. Munger of Cornell University wrote a letter to most of the bean packers of New York State regarding the types of beans which they most desired for processing and received 19 replies. Every packer stressed the importance of white seeds and dark pod color. He stated that the Kinghorn Special, a pure white seeded Brittle Wax type, was almost entirely replacing the latter variety as a processing bean in New York, purely because of its complete white seeded coat. In other respects it was identical with Brittle Wax, but because of the small dark markings of the latter variety at the hilum, Kinghorn Special was preferred. In view of the fact that he was of the opinion that the mechanical bean harvester was not far off, he likewise stressed the necessity of concentration of pod maturity. He stated, as one of the previous speakers did, that when the harvester is perfected, high yielding varieties with a concentrated pod set were absolutely essential.

In addition to horticultural characteristics, multiple resistance to disease was necessary in any future breeding program. Dr. Munger discussed briefly his work on the production of a new Tendergreen type which he hoped will possess resistance to halo bacterial blight, mosaic, and antrachnose, and, in addition, have white seed. He likewise mentioned a strain which is still under the number (47-15) which the late Dr. Emerson of Cornell developed. This strain is resistant to halo blight, three forms of antrachnose, two forms of mosaic, and tolerant to root rot. In addition, it is a white seeded Refugee type with dark pods and earlier than the regular Refugee varieties.

George P. Lippincott of J. H. Dulany & Son was unable to be present but his specifications regarding desired improvements in snap bean varieties were listed in an outline relayed to the panel. These were as follows:

For round pod type he was of the opinion that Rival and Topcrop were satisfactory as far as quality and production, but that they should possess a tougher seed coat and have a pod which was more resistant to windburn.

For new flat pod types, these should possess a brighter green pod color, less fiber, and a meatier pod with a slower rate of seed development than present varieties. They should be immune to mosaic and to powdery mildew diseases. Their blossoms should resist heat; the pods should be easy to pick from the vines and should resist windburn. In addition, a greater pod concentration should be strived for.

W. J. Zaumeyer of the U. S. Department of Agriculture was the final speaker. He briefly discussed the performance of Rival and Topcrop, two recent USDA introductions similar to Tendergreen. With respect to Topcrop, it was mentioned that it was a very widely adapted variety, a good yielder, extremely early (50 days) and concentrated in the setting of its pods. It was slightly lighter in color than Tendergreen and Supergreen, but after it was processed it appeared equally as dark as those varieties. In tests conducted in New York, Wisconsin, and Oregon, from 1946 to 1949, Topcrop produced an average of 40 percent, 1 to 4 sieve sizes, compared with 49 percent for Tendergreen. The percentage of No. 5 sieve sizes was about the same for the two varieties. As for total yield, Topcrop averaged 10,500 pounds of snap beans per acre in tests conducted in 15 states from 1946 to 1949, as compared with 6,300 pounds per acre for Tendergreen.

Processors of beans are interested in varieties of high quality that will produce their crop in as few pickings as possible. In tests conducted during the past several years in Maryland, Michigan, New York, and Oregon, Topcrop yielded 67 percent of its crop from the first two pickings. The average total yield in these states was 10,630 pounds per acre, or 7,120 pounds in two pickings. In Oregon in 1947, Topcrop produced 15,420 pounds of snap beans per acre, of which 10,460 pounds were produced in the first two pickings. The principal reason Topcrop consistently outyielded most of the commercial varieties was its mosaic resistance. Processors have ranked it highly for color, flavor and quality. Another of its desirable characteristics is that it retains its quality

for a considerable period without the formation of large seeds.

As for future plans, Dr. Zaumeyer mentioned that disease resistance was of primary importance. As with Dr. Munger, attempts were being made to produce types that possess resistance to as many diseases as possible in a single variety. The diseases that are being investigated are the mosaics, bacterial blight, and curly-top. The reason curly-top is being considered in the program is because of the need of enlarging the present seed producing areas in the West, where this disease is of extreme importance. If curly-top snap bean varieties can be developed, production may spread into the Columbia River Basin country of Washington, which is a new area and appears to be ideally adapted for snap bean seed production. At present, about 80 percent of the seed of the bush snap beans are produced in southern Idaho and additional areas are highly desired.

In addition, he mentioned attempts being made by USDA in developing green seeded processing snap bean types which should be equally as good as white seeded beans. It was felt that green seeded types would possess the same desired qualities as white seeded strains, but in addition might germinate better under adverse weather conditions. The aim in all of the new releases of the Department will naturally be to attempt to get greater concentration of pod set which will be necessary if and when the mechanical bean harvester is finally developed.

Corn Canners Meeting

TRENDS AND RELATIONSHIPS IN THE MARKETING AND CONSUMPTION OF SWEET CORN

By Dr. H. L. Stier, Head, Department of Markets, University of Maryland

The most accurate decisions are made when facts rather than opinion or conjecture are used as a basis for decision and action. As corn canners, you are trying to make sure you get the facts, all the facts and nothing but the facts, in helping you to decide what course to steer in the months ahead.

I have assembled a number of facts and figures showing the trends and relationships that have occurred during the past 20 to 30 years in the production, canning, distribution and consumption of sweet corn.

The application and interpretation of past trends must be largely made by men like yourself. Each canner has individual situations which will vary the meaning of these data to him. However, I hope that all of you will find something helpful in this presentation, something you can use to make the right decisions in the future.

Production and Pack Trends

During the past 30 years, total acreage devoted to production of sweet corn for processing in the United States has varied from less than 200,000 acres in 1921 and 1932 to slightly over 500,000 acres in 1943 and 1946. Prior to the last world war, total U. S. acreage showed fairly regular cycles of roughly from five to seven years duration each, and each succeeding cycle hit a higher level of production than the previous cycle. However, during the past seven years, acreage in the U. S. has been fairly constant at a level between 475,000 and 510,000 acres. The trend in cases of sweet corn packed has shown essentially the same pattern. The proportion of yellow sweet corn packed has increased until today more than five times as much yellow sweet corn is packed as white sweet corn.

During the past decade, a fairly significant change has occurred in the relative importance of the various production areas. Wisconsin has shown the greatest change of any single state in the pack of sweet corn during this period. In 1949, Wisconsin's pack of almost 8,000,000 cases was more than ten times its average pack in the years prior to 1937. This one state alone now packs approximately one-fourth of the nation's sweet corn. Prior to the last war, Wisconsin packed on the average about 5 percent of the nation's sweet corn. Although the other major sweet corn producing states have shown some wide fluctuations during the past 30 years, none of them have shown the consistent and large change of Wisconsin.

Changes in Can Sizes for Sweet Corn

A very marked shift has occurred in the last four years in the proportion of sweet corn packed in the various types and sizes of cans. In 1946 over three-fourths of the sweet corn packed in the U. S. was packed in No. 2 cans. This percentage had dropped to two-thirds of the total in 1947, less than one-half in 1948 and to approximately one-fourth of the pack (26.2 percent) in 1949. The shift during this period was from No. 2 to 303 and 300 cans. In 1947, only 8.8 percent of the sweet corn was packed in 303 or 300 cans. This had risen to slightly over one-fourth of the total pack in 1948 and to 37½ in 1949. Throughout this four-year period, the proportion of the pack in 12Z vacuum cans remained close to one-fifth of the total pack. A significant increase in the use of No. 10 cans occurred in 1949 when 7.4 percent of the total pack was packed in this size compared to 2.8 percent in 1946.

Stocks and Shipments

The 1949 carryover of canned corn at the beginning of the pack season (August 1) was equaled or exceeded in only two previous years of record—1938 and 1939. Those years also were the only two years in which the proportion of the stock in hands of packers was as great as at the beginning of the 1949 season. Canners had on hand approximately 20 times as much corn August 1, 1949, as they did August 1, 1948. Distributors, on the other hand, had stocks on August 1 only about 28 percent greater than they had the previous year. Despite the large supply of canned sweet corn, shipments have been relatively low this year. By December 1, shipments from canners' warehouses were about 32 percent less than during the same period last year—10,000,000 in 1949, compared to 15,000,000 in 1948. Shipments in January, however, are reported to be increasing in volume. This is to be expected since consumption has been found to increase considerably during the winter months.

Prices, Costs, and Returns

All of the information presented to this point has served as background information to inform us more fully on significant trends and relationships that have occurred in acreage, pack and stocks of sweet corn during the past two or three decades. I would like to discuss now some of the considerations that may have a bearing on the present situation with respect to canned corn. These factors can be grouped into four categories: (1) Price of both the raw and canned product, (2) comparative costs and returns for sweet corn and other competitive crops, (3) quality of the canned product, and (4) consumption —trends and factors affecting it.

Let us first take a look at the trend of price per ton paid the producer for sweet corn used for canning. In 1918 and 1919 the average price paid for sweet corn in the U. S. was $17 and $18 per ton. It dropped sharply to $11 per ton in 1922, fluctuated between $11 and $15 during the next ten years and then in 1932 it hit the all-time low of $7.50 per ton. During the next five years, it rose to $11.50 per ton in 1937, dropped $2 to $3 per ton in the next four years, and then rose sharply in 1942 and each year thereafter until this past year (1949)

when the price declined from the all-time peak in 1948 of $23.50 per ton.

Despite the high prices received by farmers in 1948 and the other war and postwar years, sweet corn had tough competition with field corn. In some sections of the country where field corn is grown, the farmers could obtain greater net returns per acre growing field corn under the support price program. The gross income per acre for field corn and for both sweet corn for processing and sweet corn for fresh market are shown in the table below:

Gross Income Per Acre
(United States Averages)

Year	Corn	Sweet Corn for Processing	Sweet Corn for Fresh Market
1948.....	$55.22	$63.00	$172.66
1949.....	46.20	62.22	98.74

Another important factor that should not be overlooked when speaking of the shifts in sweet corn production is the difference in return per acre to the producer in the different regions of the U. S. It was surprising for me to learn that during this past year (1949) the gross return to the grower for each acre of field corn was almost identical in all regions, except in the Midwest, where the gross return was about $62 per acre as compared to $51 to $53 in other sections. On the other hand, for sweet corn the gross return per acre to the grower varied from $45 per acre in the Del-Mar-Va section to over $98 per acre in the Northwest. Unfortunately, data are not available concerning cost of production in recent years. Therefore, an accurate estimate of the net return per acre is not available.

However, it is usually true that the greater the gross return per acre, the greater the profit to the grower. That usually applies because the higher gross return represents greater yield and hence usually lower unit cost of production. Of course, this increased yield and greater efficiency may be offset, at least in part, by higher labor costs, or other factors. The limited data that are available showing cost of production of sweet corn in Maryland indicate that in 1947 and 1948, the cost of producing sweet corn averaged somewhere between $45 to $50 per acre. This would indicate that

Sweet Corn—Average Gross Income Per Acre by Regions in U. S.—1949

Region	Sweet Corn	Field Corn
Northeast		
Me., N. H., Vt.....	$85.78	$53.13
N. Y., Pa.....	59.01	53.53
Del-Mar-Va		
Del., Va., Md.....	44.79	51.34
Midwest		
Ohio, Ind., Ill., Mich.....	.....	.....
Wis., Minn., Iowa.....	60.68	62.30
Northwest		
Idaho, Wash., Ore.....	98.63	53.00

unless the yield was higher than the average the producer did no better than break even. By studying the comparative returns per acre shown in the table below, it is evident that in certain sections field corn offers as good or better return to the producer as sweet corn under present economic conditions.

Trends in the price of canned sweet corn at the retail level indicate that the price does not show quite the magnitude or frequency of variation exhibited by the raw product. However, when the retail price for a No. 2 can of sweet corn is compared to the average retail price of a No. 2 can of peas or tomatoes, it is found that although prior to the war corn sold for less than peas it has risen in price during the war and postwar period until now the average price for canned sweet corn is considerably above the price for canned peas. Average prices for 1949 have just recently become available, and the average price for a No. 2 can of sweet corn in 1949 was 19.4 cents per can as compared to 14.9 cents for peas and 15.2 cents for tomatoes. I believe this relative price situation should be clearly recognized when corn canners and others make their plans and decisions for the future.

Quality

Average quality of canned sweet corn is highest in the whole kernel golden type. Four-fifths of all of this type of sweet corn packed is consistently graded fancy. A comparison of the percentage of fancy whole kernel, golden sweet corn packed by Eastern canners and by Western canners has not, in recent years, shown any significant difference. However, during the past season (1949) 79 percent of the Eastern pack of whole kernel yellow graded fancy and a little over 85 percent of the Western pack. On the other hand the average quality of the Eastern pack of cream style golden was considerably higher in 1946, 1947, and 1948 than the pack by Western states. Actually the average quality of canned sweet corn is higher than that for most other canned vegetables.

Consumption

The per capita consumption of sweet corn in the U. S. has dropped steadily every successive year since 1945. From 1933 to 1945 the per capita consumption rose each successive year, except for four of these thirteen years. Although final data are not available for consumption for the year 1949, it looks as though it may be close to 4.5 pounds per capita, as compared to the 5 pounds per capita for 1948. At the 1949 rate of consumption, the present population of the U. S. would consume annually only about 22,000,000 to 23,000,000 cases of 24/2's. If the consumption during the next six months does not rise above the 1949 average, then the carryover at the beginning of the 1950 pack season will be considerably greater than we had last year, and may equal or exceed the record carryover of 1939.

Recently the Bureau of Human Nutrition and Home Economics of the U. S. Department of Agriculture completed some very comprehensive studies on food consumption of urban families in the United States. I believe that a study of these findings may be enlightening, and perhaps helpful to corn growers and others interested in the distribution and consumption of canned sweet corn. The table below is taken from one of the reports and shows the consumption in four cities during different seasons in 1948. I have combined several sets of figures taken from different tables to show the relative consumption during three different seasons for fresh and canned sweet corn.

Per Capita Consumption of Sweet Corn—(Pounds Per Week) 4 cities—1948

Birmingham

Season	Total F. & C.	Fresh	Canned
Winter.....	.119	0	.119
Spring.....	.217	.057	.160
Fall.....	.250	.184	.066
Total.....	.576	.241	.345
Average.....	.192	.080	.115

Per Capita Consumption of Sweet Corn—(Pounds Per Week) 4 cities—1948

Buffalo

Season	Total F. & C.	Fresh	Canned
Winter.....	.207	0	.207
Spring.....	.214	.054	.160
Fall.....	1.09	1.014	.075
Total.....	1.501	1.068	.442
Average.....	.500	.356	.147

Per Capita Consumption of Sweet Corn—(Pounds Per Week) 4 cities—1948

Minneapolis

Season	Total F. & G.	Fresh	Canned
Winter.....	.201	0	.201
Spring.....	.188	.032	.156
Fall.....	.367	.239	.128
Total.....	.756	.271	.485
Average.....	.252	.090	.162

Per Capita Consumption of Sweet Corn—(Pounds Per Week) 4 cities—1948

San Francisco

Season	Total F. & G.	Fresh	Canned
Winter.....	.140	0	.140
Spring.....	.290	.164	.126
Fall.....	.480	.389	.091
Total.....	.910	.553	.357
Average.....	.303	.184	.119

I have listed below in summary form, the highlights of the findings

with respect to the consumption of canned sweet corn:

1. Per capita consumption of canned sweet corn is greatest in the winter months, and lowest in the fall.

2. Per capita consumption in the fall is about one-half (53 percent) of the winter consumption.

3. About 43 percent more households eat peas than corn; one-fourth of the nation's homes use corn on the average; over one-third use canned peas.

4. There is a greater seasonal decline in canned corn consumption per capita than canned peas. Fall consumption of canned corn is 58 percent of the winter consumption, but fall consumption of canned peas is 76 percent of winter consumption.

5. The cost of canned corn to the consumer averaged more per unit weight than peas in 1948. This price differential in favor of peas was greatest in the South.

6. The lowest percentage of households using corn exists in the West (San Francisco) and the South (Birmingham). In both sections only 20 percent to 21 percent of the households used canned corn.

7. Families having an annual income under $2,000 showed the lowest canned corn consumption (average 1.22 lbs. per week per person), and the lowest percent of using households (17.7 percent).

8. In Birmingham the highest consumption occurred in families in the $3,000 to $4,000 income class, but in Minneapolis in the $2,000 to $3,000 class. In both Buffalo and San Francisco per capita consumption increased with income, and the percent of using households increased with income up to the income class of $3,999 and then dropped slightly for the $4,000-and-over income class.

These facts concerning consumption should provide a more sound basis for decisions and plans of sweet corn canners and distributors. They point to the areas of the United States where greatest potentialities exist for increasing the consumption and use of canned sweet corn. They also point out the income classes of the population where the greatest possibilities exist for increasing the consumption of canned sweet corn. The family food consumption studies also verify other information concerning competitive prices of sweet corn compared to other canned vegetables. It indicates the need for thorough consideration of this aspect of the problem in planning any future action with respect to promotion, advertising, etc.

THE BREEDING AND DEVELOPMENT OF SWEET CORN HYBRIDS

By Dr. E. S. Haber, Department of Horticulture, Iowa State College, Ames, Iowa —Discussion Leader

Panel Members: W. A. Huelsen Illinois Experiment Station, Urbanna, Ill.; Orsen R. Robsen, Robsen Feed Farm, Hall, N. Y.; Stuart N. Smith, Michael-Leonard Seed Co., Ames, Iowa; A. D. Taylor, F. H. Woodruff & Son, Moscow, Idaho; and Floyd L. Winter, Associated Seed Growers, Inc., New Haven, Conn.

Some of the more important views presented by panel members were:

1. Changes in objectives by the sweet corn breeders are necessitated by changes in characters demanded by canners.

2. The following groups must be satisfied when the sweet corn breeder introduces a new hybrid for processing: (a) The canner, (b) the broker, (c) the contract grower of hybrid sweet corn for the canner; (d) the seed producer, and (e) the contract farmer who grows the seed for the seedsmen.

3. Seed quality definitely influences the ultimate product. Canners were advised not to buy seed because it is cheap. Cheap seed may result in poor stand, dwarfed plants accompanied by smaller ears, and poor kernel quality.

4. Quality is not well defined. What is high quality corn to one canner may not meet the standards for quality of another canner.

5. More use of cold tests should be made in order to obtain better field stands, but cold tests must be standardized first.

6. Some of the present-day requirements of a good hybrid are that kernels must be long and narrow, not too dark yellow in color, tender pericarp, good flavor, short shanked ears, upright stalks, reasonably free of tall tillers, white internal silk color, resistant to such diseases as Stewart's disease, smut, Fusarium, Helminthasporium, and resistance to corn ear worm.

7. High yield of hybrids is desirable but quality should not be sacrificed in favor of high yields.

8. A better sweet corn planter is needed. Seed is injured in present-day planters.

REPORT OF THE COMMITTEE ON SWEET CORN HARVESTERS

By D. R. Montgomery, Chairman

Although most canners are familiar with the history of the development of mechanical sweet corn harvesters, it is desirable, for the purpose of this report, to briefly review that history.

Prior to the fall of 1947, two companies had produced mechanical sweet corn harvesters commercially: Allis Chalmers, an old line farm machinery manufacturer, had prepared certain conversion parts for its field corn picker in an attempt to permit its adaptation for the mechanical harvesting of sweet corn. This machine, probably because it had been developed for picking mature corn, produced too much ear damage and accumulated too much trash in the loads to be acceptable, although it did perform fairly satisfactorily from a mechanical standpoint. The McGrath Company, a manufacturer of special equipment, produced a special sweet corn harvester based on certain ideas developed by two inventive machinists in the Midwest who had been fostered and encouraged by corn canners. This second machine was not satisfactory mechanically and showed that it would require more development and improvement before it would function successfully.

About this time, corn canners, concerned over the prospect of harvesting labor shortages, petitioned the National Canners Association to call a meeting of canners' representatives for the purpose of holding an open discussion of the problem and of planning a program for improvement and development of sweet corn harvesters. At this meeting, held on October 17, 1947, a special corn harvester committee of corn canner representatives was appointed and charged with the responsibility of expediting the development of satisfactory harvesters. This Committee was placed under the auspices of the National Canners Association in January of 1948 as a Technical Advisory Committee to the Raw Products Committee and was reappointed in this capacity in January of 1949. Funds to finance the Committee's activities were obtained through contribution from corn canners solicited by a voluntary committee under the able leadership of J. B. Weix of the Oconomowoc Canning Company.

The Committee was given an opportunity to function almost immediately by the acquisition, in November of 1947, of the McGrath Company's harvester by Food Machinery Corporation. At the request of Food Machinery Corporation a meeting was arranged, early in November, to enable the Committee to offer preliminary constructive suggestions to FMC engineers concerning improvements permissible of correction in 1948 models and major changes desirable of incorporation as soon as manufacturing problems could be worked out and confirmation by field tests could be obtained. Following this meeting, constructive suggestions were solicited from all users of sweet corn harvesters and these were consolidated into formal reports to the various manufacturers.

During 1948 the Committee members viewed field tests and offered additional suggestions for harvester improvements. They were instrumental in organizing and conducting harvester operation and service schools. This permitted users to get first-hand information on operational and service problems and manufacturers' engineers to get the benefit of many constructive suggestions for improvement and have direct contact with the many functional problems involved. During June, 1948, at the request of the canner members of the vegetable advisory committee, a project for development of sweet corn harvesters was prepared by the Committee and presented by the Director of the Raw Products Bureau, to the Administrator of the Research and Marketing Act for approval. No funds were provided for this project. After the harvesting season, constructive criticism and performance information were again solicited from users and this information was made available to all concerned.

The 1949 harvesters, as compared to 1947 models, began to reflect, to a considerable degree, the development program carried on by manufacturers with the assistance and encouragement of canners' representatives. The release during 1949 by International Harvester Company of a sweet corn harvester reflects to some degree the intense interest of corn canners in the mechanical harvesting problem as indicated by their activities during the past two years. Mechanically, all three machines seem to have performed satisfactorily during the past season. While individual canners or territories, due to their separate problems or conditions, may lean toward one machine or another, reports from the field indicate a quite general satisfaction with their functional performance. Models prior to 1949 will probably have to be charged off as experimental expense.

While no general survey of field performance has been conducted, the following may be of interest:

Federal Food and Drug inspectors have voiced their approval of the very apparent lack of damage that has been noticed during 1949 as compared to 1948.

It has been noted that there has been a general improvement in the efficiencies of mechanical harvesting due to greater experience by operators as well as improvements in the machines themselves.

The disadvantages of mechanical picking include the following:

1. There is still some damage to the ears although this damage varies between the several types of machines.

2. The inclusion of smut in the loads has a tendency to make dirty loads under some conditions.

3. The muddy ground conditions have a tendency to retard harvesting.

The advantages of mechanical harvesting include the following:

1. Provides economy of harvesting operations by reducing picking costs.

2. Permits better control of harvesting operations.

3. Reduces labor requirements at a time when adequate labor is not available.

4. Provides greater flexibility of operation by permitting night operation.

5. Tends to eliminate "slow up" due to hot weather.

The Technical Advisory Committee believes that it can contribute very little more toward the development of mechanical sweet corn harvesters. A review of the reasons affecting this decision may be of interest.

1. The 1949 models and changes contemplated for 1950 as reported by manufacturers will have incorporated most, if not all, of the improvements as recommended in 1947 by the Committee, and as supplemented since that time.

2. The investment by manufacturers in money, time and personnel training practically insures continuation of their improvement and development programs.

3. Entrance of another old-line farm machinery manufacturer into the harvesting field will tend to require continued and progressive development, and maintenance of a competitive price structure for value received.

4. Organization of service and operation schools has been beneficial in developing manufacturers' field service programs and consequently has provided a source through which additional constructive suggestions may be offered to manufacturers by users.

5. Manufacturers' field and design engineers have become fully aware of the needs and problems involved and consequently will be in a position to make future mechanical changes and improvements as required.

These have been the objectives of the Committee and the results have been very gratifying. It appears that a Technical Advisory Group functioning under the National Canners Association through its Raw Products Committee has been moderately successful, well received, and encouraged by equipment manufacturers, and beneficial to the canning industry by aiding and encouraging the development of mechanical sweet corn harvesting. One harvester manufacturer has indicated that an extremely high percentage of its improvements have originated in this manner.

In view of these results, the Committee feels that further activity on this project will not justify the time and expense involved.

Scene of the annual dinner tendered state and regional secretaries by Carlos Campbell, Secretary of the National Canners Association, on January 26. The dinner was followed by the annual business meeting of the Association of Canners State and Regional Secretaries.

N.C.A. Officers and Directors

HENRY P. TAYLOR ELECTED PRESIDENT OF N.C.A; H. J. BARNES VICE PRESIDENT; BOARD NAMED FOR 1950

Henry P. Taylor, president of Taylor & Caldwell, Inc., Walkerton, Va., was elected President of the National Canners Association at the Opening Session. He succeeds John F. McGovern, director of public and industrial relations with the Minnesota Valley Canning Co., La Sueur, Minn.

Herbert J. Barnes, vice president of the Kaysville Canning Corp., Kaysville, Utah, was elected Vice President of the N.C.A. Other officers elected at the same session are Secretary Carlos Campbell and Treasurer Frank E. Gorrell, both of Washington, D. C., who continue in offices they held during 1949.

Two Directors were elected to fill unexpired terms, 25 were elected for three years, and 45 members of the Board were held over from 1949.

Mr. Taylor, the 1950 President, was N.C.A. Vice President in 1949. He has been active in canning industry affairs and has served on the Board of Directors and on several Association committees.

Mr. Barnes similarly has taken active leadership in industry affairs. He served on the Board of Directors in 1930-32 and 1941-43, the Administrative Council in 1942, and has served on numerous Committees, including terms as chairman.

N.C.A. Board of Directors

Directors Elected To Fill Unexpired Terms

Frederic H. Bird, Medomak Canning Co., Rockland, Mo. (Term expires 1952)

R. D. Cleaveland, The H. J. McGrath Company, Baltimore, Md. (Term expires 1951)

Directors elected For Three Years

Floyd Asher, Clarksville Canning Co., Clarksville, Iowa

E. R. Blackinton, Blackinton & Son Canning Co., Ogden, Utah

E. C. Christensen, Christensen Products Corp., Weslaco, Texas

S. R. Clevenger, Bush Brothers & Co., Dandridge, Tenn.

J. E. Countryman, California Packing Corp., Rochelle, Ill.

G. E. Finch, Edgett-Burnham Co., Newark, N. Y.

Carleton A. Friday, Friday Canning Corp., New Richmond, Wis.

W. W. Giddings, Snively Groves, Inc., Winter Haven, Fla.

Dale Hollenbeck, Thornton Canning Co., Thornton, Calif.

R. W. Jones, R. W. Jones Canning Co., Inc., Arlington, Ind.

Russell B. Kline, Stokeley-Van Camp, Inc., Celina, Ohio.

A. T. Leatherbury, Eastern Shore Canning Co., Inc., Machipongo, Va.

John F. O'Hara, Davis Bros. Fisheries Co., Inc., Gloucester, Mass.

John A. Owen, Pratt-Low Preserving Co., Santa Clara, Calif.

E. I. Pitkin, Eugene Fruit Growers Assn., Eugene, Ore.

Paul H. Ploeger, The Ploeger-Abbott Co., Darien, Ga.

James M. Shriver, The B. F. Shriver Co., Westminster, Md.

Russell M. Smith, Wilson & Co., Inc., Chicago, Ill.

John W. Speyer, Kauai Pineapple Co., Ltd., Kalaheo, T. H.

Stran Summers, Charles G. Summers, Jr., Inc., New Freedom, Pa.

Lester Wass, Machiasport Canning Co., Eastport, Me.

Ernest M. Weisner, Gerber Products Co., Fremont, Mich.

Robert Wilson, Faribault Canning Co., Faribault, Minn.

Arthur W. Wittig, Port Ashton Packing Corp., Seattle, Wash.

Hollis Wyman, Jasper Wyman & Son, Millbridge, Me.

Directors Whose Terms Hold Over

H. E. Apple, Jr., Birds Eye-Snider Div., General Foods Corp., Rochester, N. Y.

William R. Benner, Streator Canning Co., Streator, Ill.

E. H. Bernhardt, Norfolk Packing Co., Plattsmouth, Nebr.

Gordon Bowman, Bowman Apple Products Co., Inc., Mt. Jackson, Va.

Milton E. Brooding, California Packing Corp., San Francisco, Calif.

A. Edward Brown, Michigan Fruit Canners, Inc., Benton Harbor, Mich.

N. C. Buckles, Quality Food Products Co., Bradford, Ohio

E. E. Burns, Alton Canning Co., Inc., Alton, N. Y.

Clinton W. Davis, Jr., Portland Packing Co., Portland, Me.

Herbert C. Davis, Terminal Island Sea Foods, Ltd., Terminal Island, Calif.

T. Donovan, Florida Fruit Canners, Div. of L. Maxcy, Inc., Frostproof, Fla.

E. J. Draper, Treesweet Products Co., Santa Ana, Calif.

Harry Draper, Draper Canning Co., Milton, Del.

S. A. Ferrante, Oxnard Canners, Inc., Monterey, Calif.

William H. Foster, Stokely Foods, Inc., Oakland, Calif.

Alfred H. Funke, P. J. Ritter Co., Bridgeton, N. J.

H. Howard Green, Concord Foods, Inc., Concordville, Pa.

Orlin C. Harter, Harter Packing Co., Yuba City, Calif.

Henry McK. Haserot, Hawaiian Canneries Co., Ltd., Kapaa, T. H.

F. C. Heinz, H. J. Heinz Company, Pittsburgh, Pa.

F. Lowden Jones, Walla Walla Canning Co., Walla Walla, Wash.

L. M. Jones, Washington Canners Cooperative, Vancouver, Wash.

Ernest E. Killion, Jr., Vincennes Packing Corp., Vincennes, Ind.

William C. Kunzman, Kuner-Empson Co., Brighton, Colo.

Harold J. McCarty, Brownsville Canning Co., Brownsville, Wis.

Julian McPhillips, Southern Shell Fish Co., Harvey, La.

Gordon Mann, National Cranberry Association, Hanson, Mass.

Keith More, Merrell Canning Co., Harlan, Iowa

F. M. Moss, Idaho Canning Co., Payette, Idaho

Maxwell N. Naas, The Naas Corp. of Indiana, Portland, Ind.

Albanus Phillips, Jr., Phillips Packing Co., Inc., Cambridge, Md.

Earl A. Randall, North Ogden Canning Co., Ogden, Utah

Arthur L. Reiling, Birds Eye-Snider Div., General Foods Corp., Hillsboro, Ore.

C. L. Rogers, Point Adams Packing Co., Hammond, Ore.

Robert D. Schenkel, Greencastle Packing Co., Greencastle, Pa.

G. C. Scott, Minnesota Valley Canning Co., Le Sueur, Minn.

T. C. Slaughter, T. C. Slaughter Company, Reedville, Va.

Joseph M. Steele, Steele Canning Co., Springdale, Ark.

C. Howard Sweatt, Besco Products Co., Orlando, Fla.

O. L. Teagarden, The J. Weller Co., Oak Harbor, Ohio

Ronald Wadsworth, California Packing Corp., Ogden, Utah

Norman L. Waggoner, Santa Clara Packing Co., San Jose, Calif.

E. E. Willkie, Libby, McNeill & Libby, Chicago, Ill.

R. H. Winters, The Larsen Co., Green Bay, Wis.

E. B. Woodworth, Hawaiian Pineapple Co., Ltd., San Francisco, Calif.

1950 Finance Committee

Also approved at the Closing Session of the Convention was the personnel of the Finance Committee. As announced by President Taylor, it is as follows:

John F. McGovern, *Chairman*, Minnesota Valley Canning Co., Le Sueur, Minn.

Harold K. Bachelder, Ladoga Canning Co., Indianapolis, Ind.

H. J. Barnes, Kaysville Canning Corp., Kaysville, Utah

John L. Baxter, H. C. Baxter & Bro., Brunswick, Me.

E. B. Cosgrove, Minnesota Valley Canning Co., Le Sueur, Minn.

Howard T. Cumming, Curtice Brothers Co., Rochester, N. Y.

S. B. Cutright, Illinois Canning Co., Hoopeston, Ill.

Clinton W. Davis, Portland Packing Co., Portland, Me.

Ralph O. Dulany, J. H. Dulany & Son, Fruitland, Md.

A. T. Flynn, Reid, Murdoch & Co., Chicago, Ill.

William A. Free, Hungerford Packing Co., Hungerford, Pa.

Frank Gerber, Gerber Products Co., Fremont, Mich.

Walter L. Graefe, Pomona Products Co., Griffin, Ga.

Herbert E. Gray, Barron-Gray Packing Co., San Jose, Calif.

Francis A. Harding, William Underwood Co., Watertown, Mass.

G. Sherwin Haxton, Haxton Foods, Inc., Oakfield, N. Y.

Harold J. Humphrey, Birds Eye-Snider Div., General Foods Corp., New York, N. Y.

Marc C. Hutchinson, Michigan Fruit Canners, Inc., Fennville, Mich.

Adolph C. Ketzler, Bordo Products Co., Chicago, Ill.

Herbert F. Krimendahl, Stokely-Van Camp, Inc., Indianapolis, Ind.

Carroll E. Lindsey, Lakeland Highlands Canning Co., Highland City, Fla.

Carl N. Lovegren, United States Products Corp., Ltd., San Jose, Calif.

R. G. Lucks, California Packing Corp., San Francisco, Calif.

H. E. MacConaughey, Hawaiian Pineapple Co., Ltd., San Francisco, Calif.

Art Oppenheimer, Marshall Canning Co., Marshalltown, Iowa

Robert G. Paulus, Paulus Bros. Packing Co., Salem, Ore.

E. N. Richmond, Richmond-Chase Co., San Jose, Calif.

H. N. Riley, H. J. Heinz Co., Pittsburgh, Pa.

Emil Rutz, Schuckl & Co., Sunnyvale, Calif.

R. L. Smith, Kuner-Empson Co., Brighton, Colo.

Henry P. Taylor, Taylor & Caldwell, Inc., Walkerton, Va.

J. B. Weix, Oconomowoc Canning Co., Oconomowoc, Wis.

Oliver G. Willits, Campbell Soup Co., Camden, N. J.

E. E. Willkie, Libby, McNeill & Libby, Chicago, Ill.

Paul H. Wolf, Roach-Indiana Corp., Gwynneville, Ind.

OFFICERS ELECTED BY OTHER ASSOCIATIONS

Officers of other trade associations, elected at their respective annual meetings during the Convention period, are as follows:

National Food Brokers Association

National chairman—Edward W. Jones, Meinrath Brokerage Co., Kansas City, Mo.; first vice chairman—Roy C. Ossman, The Paul E. Kroehle Co., Cleveland, Ohio; second vice chairman—Clarence Wendt, Allison & Wendt, Oklahoma City, Okla.; third vice chairman—T. Fred Robbins, Robbins-Greenwood Co., Houston, Tex.; member of the executive committee at large—E. Norton Reusswig, Lestrade Bros., New York, N. Y.; president—Watson Rogers, Washington, D. C.; treasurer—Harry E. Cook, The Harry B. Cook Co., Baltimore, Md.

Canning Machinery & Supplies Association

President — Eugene A. Hildreth, Owens-Illinois Glass Company, Toledo, Ohio; vice president—Hal W. Johnston, Stecher-Traung Lithograph Corp., Rochester, N. Y.; secretary-treasurer—S. G. Gorsline, Battle Creek, Mich. (reelected).

Association of Canners State and Regional Secretaries

President — William H. Sherman, Association of New York State Canners, Inc., Rochester, N. Y.; vice president—C. R. Tulley, Northwest Canners Association, Portland, Ore.; secretary-treasurer—Calvin L. Skinner, Tri-State Packers Association, Easton, Md.

Young Guard Society

President—Ennis Parker, Pomona Products Co., Griffin, Ga.; first vice president—William N. Hughes, Chisholm-Ryder Co., Columbus, Wis.; second vice president—Watson Rogers, National Food Brokers Association, Washington, D. C.; treasurer—Robert W. Mairs, Winter Garden Citrus Products Coop., Winter Garden, Fla.; secretary—Robert L. Eirich, Crocker Union Lithograph Co., Baltimore, Md. (reelected); recording secretary—Arthur Judge, *The Canning Trade*, Baltimore, Md.

Old Guard Society

President—Harry McCartney, Stokely-Van Camp, Inc., Tampa, Fla.; first vice president—F. H. Van-Emwyk, Fruit Belt Preserving Co., East Williamson, N. Y.; second vice president—Ogden S. Sells, Food Machinery Corp., Riverside, Calif.; secretary-treasurer—S. G. Gorsline, Battle Creek, Mich. (reelected).

National-American Wholesale Grocers Association

President—Sherwin A. Hill, Lee & Cady, Detroit, Mich.; vice president—L. Lee Layton, Jr., Layton & Co., Dover, Del.; vice president—J. C. Ensign, Sehon, Stevenson & Co., Huntington, W. Va.; vice president—A. J. Bischman, Sprague Warner Division, Chicago, Ill.; vice president—Harold J. Fraser, Billings Grocery Co., Billings, Mont.; executive vice president—M. L. Toulme, New York, N. Y. (reelected); treasurer—J. Stanley Seeman, Seeman Bros., Inc., New York, N. Y. (reelected).

National Preservers Association

President—C. R. Zimmermann, Barnes and Zimmermann, Inc., New Brighton, Minn.; vice president—T. E. McCaffray, National Fruit Canning Co., Seattle, Wash.; vice president—R. J. Glaser, Glaser, Crandall Co., Chicago, Ill.; vice president—A. J. Knights, A. A. Knights & Son Corp., Malden, Mass.; secretary-treasurer—John C. Fosgate, Chester C. Fosgate Co., Orlando, Fla.

Corn Canners Service Bureau

President—Edward H. Dunlap, Plymouth Canning Co., Plymouth, Ind.; first vice president—George A. Borg, Northland Canning Co., Cokato, Minn.; second vice president—Parker Mitchell, Jr., F.O. Mitchell & Brother, Inc., Perryman, Md.; secretary—Richard E. Schlecht, Rossville Packing Co., Rossville, Ill.; executive secretary-treasurer—Harvey R. Burr, Madison, Wis. (all officers reelected).

Convention Resolutions

The annual report of the Resolutions Committee of the National Canners Association was presented at the Closing General Session of the 1950 Convention, by Chairman Ralph O. Dulany. Work in preparation of the resolutions began well ahead of convening of the Convention and was consummated at a meeting Friday, January 27. Mr. Dulany read the full text of the resolutions (reproduced below) and they were unanimously voted and approved.

Agriculture

The canning industry is ever aware of its community of economic interest with the growers who supply it with raw material and for whose production it affords an essential marketing outlet. The hazards of agriculture and its importance to the welfare of the nation combine to require reasonable protection against economic catastrophe. Beyond this, it is believed that any illusive guarantee of agricultural prosperity can be purchased only by the irretrievable loss of farmers' freedom as men and citizens, and by limitless tax burdens borne inevitably by everyone. Neither American agriculture nor its associated processing industries desire an economic future dependent upon politically volatile government benefactions or upon like consumer subsidies paid for in reality by those supposedly benefited.

Government and Business

A robust American economy must be founded on individual enterprise and initiative, upon freedom to develop new processes and methods without hampering regulatory restriction, and in free and unimpeded trade among each producing area and consuming market. It can be maintained, within developed concepts of fair competition, only by affording an equal opportunity, without discriminatory burden or benefit, for all types and sizes of enterprise to compete in the production and sale of those goods and services which alone can provide an increasingly better standard of living. The Association records its unalterable opposition to any Federal or State regimentation of the food industry, whether by statute, code or regulation; and voices its firm opposition to any administrative or judicial interpretation and enforcement of existing law in any direction which may hamper freedom to compete, frustrate or penalize individual achievement, or otherwise substitute the supposedly superior economic judgment of a few in Government for the free and individual decisions of independent businessmen.

Excise Taxes on Transportation

Wartime excise taxes on essential transportation costs impede free trade and operate discriminatorily on producing areas more distantly located from consuming markets. The Association urges the immediate repeal of these taxes upon the movement of all consumer goods and particularly upon the food supply for the American public.

Appreciation to Allied Industries

In mid-1949 the Canning Machinery and Supplies Association, through its Board of Directors, graciously tendered for inclusion in the N.C.A. Reference Library, to be included in the new building for the use of the canning industry, its comprehensive library of bound volumes of industry trade journals. The National Canners Association gratefully accepts this valuable gift, and is happy to avail itself of the opportunity once again to express the appreciation of the canning industry to its many friends in the allied industries who, both collectively through their associations and as individual companies, have contributed so generously toward the successful realization of the Association's building program.

Appreciation for Speakers Allied Trades and Press

The success of the 1950 National Canners Convention constitutes a tribute to the guest speakers, the cooperation of the allied industries, and the coverage of the daily and trade press and the radio networks; therefore, be it

Resolved that the President and the Secretary of the Association are hereby directed to convey to each of them the Association's sincere appreciation of their friendly cooperation and valuable contribution.

President John F. McGovern

Inspired leadership is often the product of individual endowments refined by experience in government and business, and coupled with a penetrating insight into the hearts of men. President McGovern brought to his task of guiding the Association during the past year a background of effective Congressional service for his native state, an acknowledged expertness in public and industrial relations, and a willing capacity for work that has seldom been equalled. In a year of continued transition and adjustment, these qualities were boldly reflected in the important contributions he has made to the Association and to the economic advancement of the industry. Yet however onerous the formal duties, successful accomplishment of each is accompanied by a sparkling verve that lightens the work of others and inspires cooperation in all. His is a rare combination of wit and wisdom, of humanity, and of hard-headed realism. In conference and convention—on public rostrum or at meeting table—his winning personality and genial friendliness have won the affectionate esteem of all canners, and have measurably contributed to the solution of inescapably difficult problems. The Association and the industry record their grateful appreciation for his invaluable services.

Association Staff

Congressional commendation of an Association presentation of its industry's place in the national economic effort, together with public characterization of the job as comprehensive and complete, are unique recognitions of the effective performance of its staff. A constant high level of achievement has become virtually routine. Yet so unusual a public accolade warrants specific recognition of the competence and energy that mark the performance of Secretary Carlos Campbell and his staff in their work for the Association.

Necrology

The half century has taken a vast toll of those who pioneered in building a great industry. Its closing year witnessed the passing of many friends and business colleagues whose contributions will long endure. For them the journey is done, the summit attained, too early gone, from each of us their friends. In poignant grief, we mourn the abiding loss during 1949 of

David Wright Branch
James C. Capt
Dr. G. M. Dorrance
B. M. Gaddis
S. Milton Griscom
Ben R. Hart
Mrs. Marc Hutchinson
Fred E. Jewett
Angelo J. Lucido
Tom Martin
Donald S. Morgan
Ivan C. Morgan
Leo F. Naughton
Captain E. F. Ney
W. E. Nicholoy
William B. Olney
Ralph E. Payne
Albamus Phillips
Mrs. Albanus Phillips
Fred C. Pratt
Louis H. Risser
Neal S. Sells
George Shaw
Carl A. Swanson
Edward H. Temple
Charles H. Tugwell
S. Charles Wells
Calvin S. White
F. A. Wilder

Meeting of N.C.A. Directors

The Board of Directors of the National Canners Association held an all-day meeting Friday, January 27, with an executive session devoted to Association business in the morning and an open program session in the afternoon.

The Board accepted recommendations made by the Administrative Council presented by Chairman Marc C. Hutchinson that the Association furnish legal assistance to Florida members in their current effort to contest the constitutionality of the Florida citrus code, on the premise that if the code is permitted to stand uncontested it might establish a precedent for enactment of similar legislation in other states.

This was recommended also in the report of the Executive Committee of the Board by its Chairman, F. M. Moss, dealing with interim actions of the Committee taken between Board meetings. The Board also adopted the Executive Committee's recommendation that minimum dues for 1949 be reduced to $50. The Board then approved the Council's recommendations for a 1950 budget of $823,490, and that there be no change in the current dues structure except that the rate of dues for 1950 be figured at 1/3 of a cent for seasonal products and 1/6 of a cent for non-seasonal, instead of the .33 for seasonal and .165 for non-seasonal used in 1949.

Buildings Committee Report

In reporting for the over-all Buildings Committee, Chairman W. F. Dietrich reviewed the financial position of the program, pointing out that the fund is composed of $200,000 in presently occupied property valuations, $300,000 transferred from the general fund of the Association, the special dues assessment amounting to approximately $300,000, contributions from canning machinery and supply concerns of over $520,000, and contributions from the steel industry of $105,000. The total fund as of January 2, Mr. Dietrich stated, exceeds $1,400,000. The fund was divided between the Eastern and Western projects with the Eastern Subcommittee allotted $950,000 and the Western Subcommittee $450,000.

Chairman Dietrich introduced the respective Chairmen of the Eastern and Western Subcommittees—H. J. Humphrey and H. E. Gray. Mr. Humphrey reported that the Washington building was progressing very satisfactorily and would be ready for occupancy about the middle of April if present schedules are maintained and that the total Eastern project including new furnishings would not exceed $925,000, thus leaving a balance of $25,000 in the amount allotted the Eastern Subcommittee.

In reporting for the Western Subcommittee, Mr. Gray reviewed the work of investigating and rejecting the proposal to remodel a building in San Francisco, real estate transactions whereby the Berkeley site was made more desirable through the acquisition of additional ground, and the satisfactory progress in the development of architectural and engineering plans for a two-story laboratory building. Mr. Gray forecast the start of construction work this Spring and occupancy in March, 1951.

The following resolutions pertaining to the work of the Buildings Committee and the two subcommittees were adopted:

Resolved, That the action of the Buildings Committee in delegating its authority to an Eastern Building Subcommittee and a Western Building Subcommittee, and all other actions taken to date by the Buildings Committee or its subcommittees in connection with the Association's Building Program are hereby expressly ratified;

Resolved, That until such time as its duties have been completed, the Buildings Committee be and hereby is authorized to proceed with the Association Building Program; to appoint any necessary subcommittees from its own or the general membership to which subcommittees it may delegate any part of its authority; to retain or consult with engineers, architects, and others; to expend the funds collected or set aside as the Association's Building Fund and otherwise to take any and all steps which it may deem necessary in carrying out its duties; and, further, that the Chairman of the Buildings Committee, or any other member of the Buildings Committee to whom it delegates its authority, be authorized to execute in the name of the Association all necessary contracts and any other instruments to carry out the action of the Buildings Committee or of any subcommittee thereof;

Resolved, That the Buildings Committee be and hereby is authorized to sell, exchange, lease, convey, or otherwise dispose of the present realty, buildings, or equipment of the Association in the District of Columbia or in California, and to purchase for the Association any lands, buildings, equipment, or other properties in such places; and, further, that the Chairman of the Buildings Committee, or any other member of the Buildings Committee to whom it delegates its authority, be authorized to execute in the name of the Association all necessary contracts, conveyances, deeds, and any other instruments to carry out the action of the Buildings Committee or of any subcommittee thereof;

Resolved, That Carlos Campbell as Secretary of the National Canners Association, is hereby authorized to pay from the National Canners Association Buildings Fund the Progress Payments for the building of the Association's Washington headquarters building required by Article 4 of the contract dated April 11, 1949, between George A. Fuller Company and the National Canners Association upon presentation to him by George A. Fuller Company of Certificates of Payment issued by Abbott, Merkt & Company, Inc., the Engineers, as provided by Article 25 of the General Conditions of the Contract for the Construction of Buildings, which is a part of the contract of April 11, 1949; *Provided*, that final payment under the final certificate issued by the Engineers, as provided in Article 5 of the contract of April 11, 1949, shall be made only with the approval of all the members of the Eastern Building Subcommittee of the Buildings Committee of the Association.

Other Board Resolutions

Resolved, That until further action of the Board the incumbent President and the Secretary of the Association are authorized with the advice of the Convention Committee and in collaboration with other participating associations to select the location of the Annual Convention for any successive number of calendar years as may be necessary, in the judgment of the President and Secretary, for the effective scheduling of such conventions.

Resolved, That the following committees of the Association be continued as Special Committees with their present functions and duties, as authorized by the Board of Directors on May 22, 1946, January 19, 1947, May 28, 1948 and January 16, 1949: Agricultural Policy, Conference, Convention, and Procurement.

The formal reports to the Board of the Claims Committee, Home Economics Committee, Scientific Research Committee, Manpower Committee, Convention Committee, and the address made by H. Thomas Austern, Chief Counsel of the Association, on "The Washington Scene," are reproduced elsewhere in this issue.

REPORT OF THE CLAIMS COMMITTEE

By Paul Fishback, Chairman

The underlying purpose of the Association's activities in the investigation and handling of complaints or claims involving canned foods is to protect the integrity and reputation of canned foods generally. A review of the work for 1949 discloses favorable results looking toward the accomplishment of this purpose.

For the first time since the close of World War II there was a decrease in the number of new cases received, as compared with the next preceding year. During the year immediately following the war period the trend was upward, reaching 1,693 cases in 1948, whereas the number last year was 1,577, a decrease of nearly 7 percent. It is difficult, if not impossible, to ascertain the primary reason for the "recession."

On the other hand, the year showed a marked increase in the number of new suits filed, there having been 129, as against 93 in the year 1948. At the close of the past year there were 228 suits pending, including three cases on which appeals had been taken by the losing party in the trial court. Eighty-nine suits were disposed of during the year, 45 by settlement, 26 by dismissal for lack of prosecution, abandonment or transfer of defense to another agency, while only 18 of the group proceeded to actual trial. Of the latter group 13 resulted in judgments for the defendants, thus completely exonerating the member's product in those cases, and claimants won moderate awards in 5 cases. The total of these awards was only $1,423, the largest in any one case being $491.50.

In a small percentage of cases not pending in suit settlements, mostly in nominal amounts, were negotiated at the request of the members concerned. The majority of these were cases in which the investigation disclosed some valid basis for the claim which was asserted and the disposition of such cases could not reasonably be held a departure from the industry policy of vigorously contesting unwarranted claims.

The value of the Association's claims service was recognized during the year when the Division's director was invited to appear on the program at the annual convention of the Canadian Food Processors Association at Vancouver, B. C. A detailed outline of the Division's method of investigating and handling complaints or claims was presented to the Canadian association to the end that the latter might give full consideration to the organization of a similar service for its members.

Similar recognition of the aims and accomplishments of the service was evidenced by a recent request from The Coca-Cola Bottlers' Association, Atlanta, Ga., for detailed information concerning N.C.A.'s method of handling cases. Conference with the secretary of that association clearly indicated that common problems were involved with respect to the investigation and handling of consumer claims despite the difference in the nature of the products of the two industries. Further, it seemed obvious that any assistance given to the Bottlers' Association would be helpful in meeting the over-all claims problem confronting manufacturers of various types of food and beverage products. The requested data was therefore supplied, with the understanding that it would be treated confidentially.

As has been customary from the inception of the service, valuable contributions to the Association's claims work have been made during the year by the Washington, San Francisco and Seattle Research Laboratories. These contributions are too numerous to outline in detail in this report, but consisted mainly of examination of exhibits and original samples, providing technical advice on various problems incident to the handling of cases, and furnishing expert scientific testimony in court cases.

REPORT OF THE HOME ECONOMICS COMMITTEE

By K. F. Boucher, Chairman

By means of the accompanying factual charts, complete explanation is made of the actual expenditures in 1949 and of the results obtained from that expenditure. Certain objectives and specific avenues of approach to those objectives are presented in pictorial detail.

1. The promotional and publicity effort of the Home Economics Division accomplishes work which no individual company, concerned with its own labels and its own products, can or desires to do.

2. The work of the Division, supported collectively by the entire Association, promotes the cause and increased use of canned foods as commodities.

3. No factor in the canned foods business does a more effective job in the promotion of canned foods than does the Home Economics Division.

4. Because the cost of this work is covered by an allocation of about $7.80 of each one hundred dollars of each member's dues, it is claimed that in no phase of a member's operations does he receive so much for so little.

5. Whether or not any specific segment of the industry might consider that it is getting less than its full share of the Division's work, it is maintained that he is getting his full money's worth, because of the over-all foundation supporting the cause of canned foods as commodities.

6. It is explained that the Division's operations create a vital, over-all base on which each member's individual efforts can be established, thereby adding strength to those efforts.

The work of the Division is geared strictly to the requirements made of it by the Association and in accord with its rightful share of the total budgets made available for the Association work. Actual accomplishment during 1949 are clearly delineated, in part at least, by the charts reproduced herewith.

MENU & RECIPE SERVICE
1 SERVICE KITCHEN
Daily Testing and Experimentation
2 PRODUCT LEAFLET
For Member Distribution
Quantity Distributed In 1949..... 81,000
3 SCHOOL LUNCH RECIPE BOOK
For School Food Service
Quantity Distributed In 1949..... 44,000

EDUCATIONAL MATERIAL DISTRIBUTION

to DIETITIANS, STATE INSTITUTIONS, RESTAURANTS, SCHOOLS & COLLEGES

ESTIMATED TOTAL AUDIENCE ? FAMILIES

CANNED FOODS TABLES *distributed* **425,000**

SCHOOL LUNCH RECIPES *distributed* **44,000**

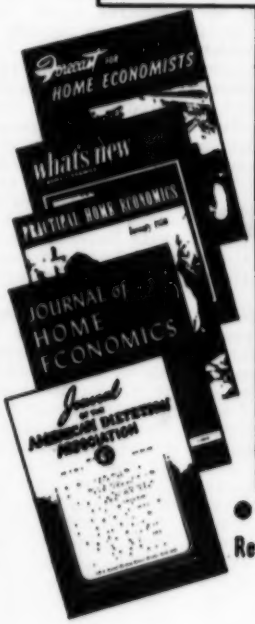
CANNED FOODS IN MODERN MEALS *distributed* **355,000**

CANNED FOODS RECIPES *distributed* **12,750**

TEMPTING RECIPES *distributed* **28,700**

STORY OF CANNING INDUSTRY *distributed* **13,300**

ADVERTISING



15½ PAGES DURING 1949

using

4 Professional Magazines

1 Dietetic Journal

to secure Requests for Educational Material

● Total Copies of Publications Requested to Date **758,692**

PUBLICITY ACTIVITIES

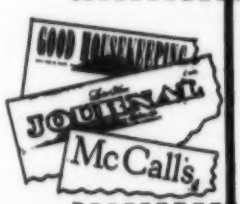
MONTHLY RADIO RELEASES to 875 STATIONS

MONTHLY NEWS RELEASES to 475 NEWSPAPERS

(combined circulation over 36 million)

SPECIAL EXCLUSIVE RELEASES for Syndicated Writers

(estimated circulation - 33 million)



INFORMATION BUREAU for Magazines, Radio Stations

- *Answering Questions*
- *Arranging for Stories & Pictures*
- *Editing Manuscripts*

(estimated circulation - 99 million)

Influencing a public Audience well up in the millions!

1949 TRAVEL-30 CITIES-16 STATES

CONVENTIONS & CONFERENCES ATTENDED 1949

National Canners Association	Atlantic City, N.J.
Photography Symposium	New York, N.Y.
National Association of Women Broadcasters	Chicago, Ill.
Home Economists in Business	San Francisco, Calif.
American Home Economic Association	San Francisco, Calif.
Newspapers Food Editors	Chicago, Ill.
American Dietetic Association	Denver, Colo.
School Food Service Association	Washington, D.C.

REPORT OF THE SCIENTIFIC RESEARCH COMMITTEE

By R. E. Sanborn, Chairman

I appear before you representing your Scientific Research Committee. You already have the *Report of the Research Laboratories* covering their activities in the year just past, which activity is this Committee's primary responsibility. We have examined this report carefully and commend it to you as a factual report of duty well and faithfully accomplished in accordance with what we believe to be your wishes.

I choose to touch briefly on certain activities of the Committee itself.

This committee met three times during the past year—in May, October, and this week, January. Our most serious concern was the Laboratories' expense accounts and recommended budgets for 1950 as bearing on the cost of what we consider the minimum and essential activities of the Laboratories. Last year the Committee obedient to your instructions, materially reduced its recommended budget, and the Laboratories with equal sincerity reduced their expenses. The result was the reduction of the staff of the Laboratories, the serious curtailment of at least one vital part of the service to members. I refer to the sanitary surveys and much work along this line that could have been undertaken to advantage, the minimization of all new lines of developmental work, and the reduction of much of the continuing work of the Laboratories to the minimum of personnel and expense.

The proposed budget for 1950 disclosed a very conservative increase over 1949. No novel project was offered, the increase being entirely in the cost of travel expense and operating charges, plus what we considered to be less than adequate recognition, three years or more overdue, of the rise in living cost of our staff. Certainly none of the increases gave any proper recognition to the merit of that staff, or their advancing length of service.

We believe that the Laboratories' budgets had been held as low as might be without eliminating one or more of the services that we consider essential. When it is observed that 80 percent of the budgets are salary and about one-half of the work of the Laboratories is service to individual members which becomes part of the fundamental knowledge for future application in consulting the membership and solving its problems, both the justification for this work and the inadvisability of reducing it in amount become apparent.

For 1950 it appears that the Laboratories must devote increased time and effort to two fields: One, their part in the investigation of consumer claims, including exploration of evidence and expert testimony. These appear now to be on the upswing. The other is to take part in the development of facts and presentation of testimony in the standards procedures under the Food and Drug Act, now rapidly gaining momentum since the war . At present in progress is the hearing to consider the entire use of insecticides involved in the production of foodstuffs. This one hearing will consume months in the actual taking of expert testimony. While we will have adequate legal representation and also observation and reporting of the steps as they develop, considered by our Raw Products Bureau, this hearing will require months of attention from one or more of our Laboratory staff. Other hearings are in more or less immediate prospect; the conclusion of the long drawn-out corn hearing, and other hearings on asparagus, tuna, pineapple, and possibly others are imminent. In all these the section of the industry involved accepts the cost and time burden of assembling data and supplying lay testimony, but advice on the technical aspects of the all-important legal side of the matter, with many days of considering all of the testimony presented, must fall on the Laboratory staffs.

The special projects of last year offer little or no continuing problem. The cannery lighting bulletin is completed, and no extension of this work is contemplated unless and until the industry may advocate it.

We contemplate continuing work for the Labeling Committee in an effort to extend the scope of the informative labeling program. This is neither greatly time-consuming nor expensive. The cannery lighting bulletin has been examined by the Scientific Research Committee and is considered to be ample justification for the funds supporting this project. Copies will be presented to the members of this Board at the close of the session. One copy will be supplied free to each member of the Association. Additional copies will be available at 50 cents each through the courtesy of the American Illuminating Engineers.

The Scientific Research Committee has expressed its appreciation of the work, to the Association of Illuminating Engineers Committee who have devoted much time and thought to the project, and to the Stanford University Illuminating Engineers Department for its services in connection with the fellowship we supported.

The Scientific Research Committee expresses the hope that after examination of the bulletin, this Board will elect to express its official approval.

In closing, I am sure that I can assure the Board that the reduction in budget from our recommendation will be scrupulously administered both by the Committee and the Laboratory staffs and the reductions applied in accordance with our combined judgments as to what adjustments can be made with the least harmful effects.

REPORT OF THE MANPOWER COMMITTEE

By Luke F. Beckman, Chairman

Aggregate production of commercial truck crops for commercial processing was a trifle larger in 1949 than in 1948. Labor for canners during 1949 was in general considerably more plentiful and better in quality than in 1948. Business nationally found that the transition from war to peacetime activity approached peacetime conditions. The production of previously scarce consumer commodities caught up with consumer demand and we entered 1950 with only a few such items having any backlog of orders. This transition or leveling off in general, coupled with the exhaustion of the wartime savings of millions of workers, tended to make more workers available and more individuals willing to engage in seasonal food processing work.

I have received reports from various sections of the country that in many canning areas there was an actual surplus of men and women available for jobs in their plants. According to the figures of the United States Employment Service there were periods of the year when nearly 4,000,000 people were seeking jobs. This meant that although the canner was faced with higher wage costs and lower selling prices, some relief could be obtained by a more careful selection of workers. During the war years he hired almost any kind of a worker he could find, and was reluctant to discharge inefficient or incompetent workers for fear replacements would not be any better or not be available at all. The wise canner, and I think we have to be considered in that class if we're still in business, took this increased labor supply into consideration and did these things:

1. He decided upon the least number of workers he would need to handle his pack;

2. He insisted that his employment manager hired or the state employment service sent him only qualified and competent workers; and

3. He kept a close check on output per worker and followed through by replacing those workers who didn't do a full day's work.

I should add a word of explanation. What I've just said applies largely to in-plant labor.

These canners who also participate in getting workers for their growers

found that labor was somewhat more plentiful for harvest labor. There was not, however, as much improvement in the quality of the worker, although by general observation I would say there appeared to be generally less turnover.

Types of Workers Used by Canners in 1949

Canners and processors generally followed wartime customs in the kinds of workers used in plant and field. There were, however, a much greater number of local workers employed with a greater percentage of men than were securable during previous years. Workers employed from out of the canners' home area, while fewer in number, were recruited from much the same places.

Workers were used in large numbers from Texas, Arkansas, Oklahoma, Missouri, Kentucky and the eastern seaboard states. According to estimates made by the United States Employment Service, migrant workers, who engage in agricultural and food processing seasonal work, total approximately 1,000,00 workers. Most of these workers are recruited by some type of direct negotiations between the employer and the worker, either through the state employment service offices, private labor contractors, or by direct arrangements between the employer and worker. There is also a sizable movement of migrant seasonal workers who follow certain well established routes and crops.

These workers migrate independent of any negotiations. These major routes and the number of workers who move on their own on these routes are:

Atlantic Coast	35,000- 40,000
Gulf to Great Lakes	50,000- 60,000
Intermountain	20,000- 30,000
Pacific Coast	80,000-100,000

The employment service maintains information stations along these routes to direct workers into those areas needing workers in various crops. They also pass out guides or maps which point out to these workers the various places where employment can be found.

From among the 7,000,000 migrants, plus the local labor supply, the state employment services, who are affiliated with the United States Employment Service, filled jobs totaling well over 9,200,000. This was an increase of 3,000,000 over 1948.

Canners, processors and agriculturists also used in field activities 116,000 foreign workers. This included 5,431 British West Indians, 106,000 Mexicans, and 5,000 Canadians. Most of the Mexicans were employed primarily in cotton and only a few on canning crops. Also only 19,600 Mexicans were actually brought into the United States from Mexico, the remainder being illegal entrants, commonly called "wetbacks" who every year have entered this country and worked but have never been legally recognized until this year. In the past three years there has been a reduction in the use of legally sanctioned foreign workers of 145,000 workers.

Foreign Workers

As more domestic workers became available, it became obvious that fewer foreign workers should be brought into the country. Treaties between the United States and foreign countries were to the effect that foreign workers would enjoy the same wages and working conditions as American workers, and that no foreign workers would be permitted to be brought in at any time if there were qualified domestic workers willing to work. The Immigration and Naturalization Service and the United States Employment service have tried to follow the intent of these international treaties, but nevertheless have been questioned and criticized on occasion by labor groups and others for permitting any foreign workers to be brought into this country.

Just recently the following resolution was passed by the Federal Advisory Council to the Bureau of Employment Security which was directed to the Secretary of Labor who is responsible for the operation of the United States Employment Service:

"That the U. S. Employment Service advise all agencies of government that there are sufficient numbers of American citizens available for farm work to meet any anticipated requirements for manpower on the Nation's farms during the coming year, and that there is no longer any need for importation of foreign labor. We, therefore, recommend other arrangements be made during the coming year for recruitment of foreign workers and, further, that the U. S. Employment Service withdraw all pending certifications of need for foreign agricultural workers and order the return to their native homes of all foreign agricultural workers now employed in the United States, upon completion of their present contracts."

I quote also Secretary of Labor Maurice J. Tobin's reply to this resolution which was in the form of a memorandum to Robert C. Goodwin, Director, Bureau of Employment Security:

"I have given careful consideration to the resolution adopted by the members of the Federal Advisory Council with reference to the importation of foreign labor for agricultural employment during the calendar year 1950.

"The desire of members of the Advisory Council that American workers be given every possible employment opportunity, and that importation of foreign workers not be permitted to adversely affect wages and working conditions, is an objective with which I am in full agreement. However, the labor requirements of the agricultural industry are of such a complex nature that it is not possible at this time to accept in entirety the recommendations adopted by the Council which would in effect bring to an end our present arrangements for the use of foreign agricultural workers. This is not possible because it is necessary, as a part of our national economy, to have the necessary manpower available where and when it is needed to handle agricultural products.

"It is my belief that the objectives of the Council can be accomplished through two courses of action, which I propose to take. First, it is my intention to request the President to appoint a commission to study the economic and social problems of the migratory agricultural workers, foreign and domestic, and to recommend to the President whatever program is found desirable. The second action, as you have suggested, should be taken by the Bureau of Employment Security to improve administrative procedures designed to hold to a minimum the number of foreign workers and to be certain that domestic workers are utilized to the fullest extent. If and when domestic workers on the continent are insufficient to meet agricultural needs, preference should be given to the use of our citizens from Puerto Rico. This policy should be discussed with the members of the Farm Committee when they meet with us in January and their support solicited in making this policy fully effective.

"Please transmit the content of this memorandum to the members of the Advisory Council and express my appreciation for their assistance."

From this you see apparently some foreign labor may be used in 1950, but due to all the pressure on Secretary Tobin, in all probability the only foreign labor which will be permitted this year will be only in those instances where there is a proven emergency developing with no domestic labor available to take care of it. I recommend, therefore, that all canners carefully consider all various sources of American labor in their labor supply plans this coming year.

Wage and Hour Legislation

Several sections of the country reported more vigilant enforcement of the child labor provisions of the wage and hour act. This enforcement caused concern to some canners, as interpretations of the Act appeared to make the processor responsible under the "hot goods" clause if he even innocently used a commodity harvested by illegal child labor. The Act has been amended in this respect. There are also amendments and some exemptions available in the minimum wage part of the Act. I recommend,

if you wish to be sure you keep out of trouble, that you get first-hand interpretations of the law and amendments as it applies to you. I suggest you get acquainted with the wage and hour inspector in your district wage and hour office. He also has printed information pamphlets on exemptions and your rights under the law.

Sources of Labor in 1950

The trend toward a greater supply of domestic workers is likely to continue in 1950. I recommend a full appraisal of possible sources and kinds of workers which comprise the unemployed workers throughout the country. The United States Employment Service, through the state employment service, has farm placement representatives in all local offices who have information on this subject. I recommend that you go over your needs and problems with them.

We also want to reduce taxes and see government spending held down. I think we should plan to use as many local workers as we can. Many of our local workers are drawing employment benefits and we pay taxes to the state to pay these benefits. Every worker we hire who is drawing benefits helps reduce government expense. This helps out, too, where workers are drawing relief from some relief fund. Another thing, if we know of any workers who are drawing unemployment benefits and working in our plant or one of our growers at the same time, it ought to be reported by you to the Employment Office so they can know about it and get him off the benefit list. I know they want this assistance and we can help reduce government costs a little.

1950 Prospects

As I said before, labor costs continue to go upward and the market price downward. The canner who stays in business therefore must trim somewhere. One possible saving is in the right use of our labor. We should plan wisely. I repeat, we should figure to use only the amount of labor we actually need, basing it closely upon selecting good workers, making sure we're keeping them busy and that they are producing their share of the work.

REPORT OF THE N.C.A. CONVENTION COMMITTEE

By Robert A. Friend, Chairman

Just a year ago in this same room you gentlemen of the Board of Directors issued a directive to the Convention Committee and the officers and staff of the Association. We were instructed to exert every effort to so plan the 1950 Convention that canners and brokers would meet at the same time and place.

The Convention you are now attending is the best evidence we can offer that these instructions have been fulfilled. Atlantic City this week is housing both canners and brokers in full quota. There are plenty of buyers here also, and starting today members of the C.M.&S.A. are present and their four-day exhibit has opened in Convention Hall.

We shall not attempt to recite in full detail all the steps taken to bring this Convention about, but in brief this is the problem we had to meet:

To enable canners to see brokers the National Food Brokers Association must have a satisfactory convention. This means that they must be provided with sufficient rooms to house not only their members but their non-canner principals whose presence is important to them and whose numbers have greatly increased in recent years. To enable canners to view the huge exhibit staged by the Canning Machinery & Supplies Association, provision must be made not only for that association's executive and engineering personnel, but also for the attendance of other food manufacturers whose purchases help to make exhibit profitable and satisfactory to the exhibitors.

Our planning for the 1950 Convention accordingly was concentrated on achieving these objectives. A series of meetings of the officers and respective convention committees of the three sponsoring associations was held during the spring months and resulted in agreements to departmentalize the annual convention into two periods: A National Food Sales Conference, co-sponsored by N.C.A. and N.F.B.A. to be followed by a Food Congress on Production, co-sponsored by N.C.A. and C.M.&S.A. Schedules were worked out with the hotels to allot the facilities equitably among the three associations, with every effort to provide the more desirable rooms for the members of the respective associations and to permit contacts between canner, broker, buyer and supplier on non-conflicting time schedules. Provision of facilities for buyers was made in the N.C.A. allotment of hotel rooms.

Your Committee wants to pay its respects to N.F.B.A. and C.M.&S.A. for the close cooperation and the give-and-take that made it possible to stage this huge co-sponsored event in all its complicated ramifications. We invite you at the close of this Convention to send your comments to N.C.A. headquarters or to the Convention Committee that will succeed us. Please make it plain whether the type of convention we have brought to pass this year meets your favor or disfavor. Your honest opinions will guide the planning of future conventions.

We were authorized, as you may recall, to work out plans for both 1950 and 1951, and, as has been announced, Chicago has been booked as the Convention City for 1951 for the period February 12 to 24, with a similar departmentalization between sales and production periods and activities.

Starting tomorrow morning—Saturday—in Convention Hall the official N.C.A. sessions of this Convention will begin, with Franklin J. Lunding, well-known food distributor, as guest speaker, to be followed by a special session at which we will hear the Honorable Charles Sawyer, Secretary of Commerce. The closing session is booked for Sunday afternoon, also in Convention Hall, with equally strong attractions on the rostrum. In Dr. Detley W. Bronk, chairman of the National Research Council and president of Johns Hopkins University, and Clarence Randall, president of Inland Steel, we have a leading scientist and a foremost industrialist. A successful convention to all of you. It has been a pleasure for this Committee—your chairman, Milton Brooding, William Kinnaird, A. L. Koch, H. E. MacConaughey, George Morrill, and Harold Patterson—to serve you.

THE WASHINGTON SCENE

By H. Thomas Austern,
Counsel for N.C.A.,
Washington, D. C.

These days one coming from Washington is apt to be asked, in the words of the old hymn,

"Watchman, tell us of the night—
what its signs of wonder are?"

Yet, paradoxically, what happens in Washington has no meaning of its own. There is no intrinsic importance in any Washington event. For as you might expect in a democracy, most people are important in Washington only because they were first more important somewhere else. Official action largely reflects what is taking place elsewhere in the world, and foreshadows what is likely to happen in this country.

Just as a newsreel cannot completely or adequately report significant events, any brief survey suffers the same limitations. Only what is within camera range at the moment can be caught; only what the photographer deems important is pictured; and the distortion of the lens is often matched by the bias of the observer. Necessarily, too, the film must be cut and edited.

Our verbal newsreel this afternoon therefore proceeds on the basis that

canners are first of all citizens—that they are broadly interested in the doings of their government as a whole—and that inescapably the economic fate of the food industry is controlled by the political and economic course of the entire nation. Yet wherever possible I shall, with your permission, endeavor to emphasize those governmental activities which bear directly upon your own operations.

Perhaps this report could have had subtitles: A still troubled world; a national election at home; the churning, high productive activity of a $40,000,000,000 Big Government in a $250,000,000,000 economy; and lastly the problem of arithmetic—common to countries, canners, trade associations, and each of us—of how to pay for everything we feel we ought to do.

Foreign Affairs

Let's look briefly first at the outside world in which this takes place—at that part of our newsreel sequence called Foreign Affairs. From the Berlin airlift of our last meeting to Formosa is a long way, but politically the two are surprisingly contiguous. Although the focal point of uneasiness has moved from the West to the East, the international situation appears somewhat brighter than it did a year ago.

The plain, and perhaps too hopeful fact, is that Communism has been contained in Western Europe—an achievement attributed by many to the Marshall Plan and the Atlantic Pact. It is no longer mushrooming westward as it was a year and a half ago, when even France and Italy were threatened. There is a new term in the world vocabulary — Titoism. Viewed over-all, the European situation, as one observer has put it, has perhaps changed from a "cold war" to a "cold peace." But whatever the resulting temperature, a substantial price has had to be paid, and many are concerned as to how much and for how long the United States can continue to foot the bill.

The Marshall Plan countries still have a serious dollar shortage. Neither the European Recovery Program nor other remedies for closing this dollar gap have succeeded. Nor has devaluation of European currencies as yet appreciably increased the dollar earnings of the ERP countries. The only hope for economic stability seems to lie in real—rather than paper—progress toward economic unification of Western Europe. Paul Hoffman has been talking plain, hard facts to the Europeans. Congress undoubtedly will underscore his words when it considers the next appropriation for ERP. Perhaps there will be some substantial achievement in that area.

Internationally, as you know, the most challenging problems today lie in the Far East. The Chinese Communists have taken over the whole of China. Early this month the British recognized the new Chinese Communist government. And some believe that the Chinese Communists can take over Formosa, the last haven of Chiang Kai-shek, with relatively little trouble.

Although many might be hard put to place Formosa on the map, it may turn out to be the rock on which will founder the so-called bi-partisan American foreign policy. There are wide and increasing differences of opinion on what to do about China. Ex-President Hoover and many others have urged that we support Chiang Kai-shek, that we protect or even take over Formosa, and perhaps encourage if not underwrite a Nationalist re-invasion of the Chinese mainland. The Administration has flatly rejected this idea, and a major debate in Congress is not unlikely.

On that issue, I do not presume to know any answer. Yet many point out that Chiang Kai-shek's government has been both inept and corrupt—that in August, 1945, it was the strongest government in the East, largely through American support and matériel—and yet four years later finds it utterly collapsed. The Chiang Kai-shek clique would appear to be a fairly hollow reed on which to rest American policy or action.

The Secretary of State has suggested that ultimately the Chinese must work out their own destiny. He has pointed out that political thinking among the vast millions of Asia is in a ferment, and that if the Eastern peoples resent the intrusion of foreigners in their affairs, they will come in time to resent the heavy hand of Moscow.

Point Four

Moreover, one could hardly think of any potentially greater drain on the American economy than China. To support a government in Greece, we have thus far spent about a billion dollars. There are only 7,800,000 people in Greece. There are about 450,000,000 people in China. However far-fetched the analogy may be, you can make your own calculations as to the economic cost of a mistake in this area.

In one direction in international affairs, the Administration soon expects to break new ground. This is the so-called "Point Four" program. Essentially, it consists of two proposals. One is to provide technical assistance to the peoples of underdeveloped areas—to teach them how to grow better crops, perhaps to can them, and to raise their standard of living. The other aspect of the program is the guaranty of investment of new American capital in foreign countries against certain risks peculiar to foreign investment. Operating losses will not, of course, be protected, but the United States will attempt to protect investments by treaty and will guarantee payment for expropriation or confiscation by any foreign government as well as convertibility of profits earned back into dollars.

Finally, one thing is certain about our foreign spending. It will be measurable reduced. As State Department Counsellor George Kennan has suggested, American monetary benefactions to foreign countries should be founded on a fivefold policy: Foreign aid should primarily serve the best interests of the United States; it should help others to help themselves; it must be within the limits of what we can afford; we must recognize that what works in one area may not work in others; and that it must be considered an investment in our own defense and not as charity. The President has asked for $3,000,000,000 for the European Recovery Program, but there will be a major battle in Congress to secure an appropriation even approaching that figure.

Military Assistance

On the other hand, the chances are that Congress will approve close to the billion dollars requested for military assistance programs. The fact that the Russians now have the atom bomb is expected to diminish much of the opposition to the military aid program.

Let's turn next, then, to the domestic economy which necessarily must support this foreign spending. Last May when I talked with the Board, the country was experiencing a slump. This was called everything from a "healthy disinflation" to a "minor recession"—and by some even a "depression." Whatever may have happened in some canning lines since then, I hope you will forgive me when I suggest that, on an over-all basis, those who thought we were heading for a real bust have turned out to be wrong.

Taking American business as a whole, the low was reached in mid-year 1949 in production, employment, stock prices, and other supposed indices of our economic well-being. Since then, there has been a rather steady climb upward. Our economy, although not yet back to a level comparable to the end of 1948, is in fairly good condition. If from where you sit you find this difficult to believe, let's look at a few facts.

In November, 1948, the Federal Reserve Board's adjusted index of production was 195. In July, 1949, it was down 17 percent to 161. But despite the coal and steel strikes, by last December it was up to 176. If stock market prices mean anything, by the end of the year the New York Times average of 50 loading stocks was up 30 percent and even was six points higher than they ever had been in 1948.

Prices in general, it is true, fell off five percent during the first six months of 1949. But by and large they held firm in the last half of the year, and did so in many parts of the canning industry. Wholesale food prices, however, declined eight and one-half percent during 1949. The biggest wallop was taken by the prices for farm products. These had a sustained drop in 1949, failing to stabilize throughout the year, and by the end of the year were off 12 percent. Indeed, farm income for 1949 is estimated at $15,000,000,000, a drop of about 18 percent from 1948.

On the other hand, it may surprise you to learn that the price of consumer goods as a whole held firm through most of 1949. The November index was less than two percent below the end of 1948. Retail food prices fell an even two percent during the same period, and a larger drop for December is reported.

Perhaps the shortest way of making the comparison between 1948 and 1949 for the whole economy is to use the economist's jargon of gross national product—the dollar value of all goods and services produced. This gross national product for 1949 was estimated at $259,000,000,000, or only about one and one-half percent below the all-time peacetime high of 1948.

Forecasts for 1950

What of the coming year? There has seldom been such unanimity among forecasters. Without exception predictions for the first half of 1950 are highly optimistic. Businessmen, the President's Council of Economic Advisers, and everybody else tell us that business is going to be as good or better for the first six months as it has been in late 1949. These people point to relatively high employment, to a healthy backlog of orders in many businesses, to contracted inventories, and to firm prices and sustained purchasing power. At the least, inventory jitters have almost vanished in many lines. Incidentally, almost every forecaster makes mention of the economic shot in the arm through the distribution of about $2,500,000,000 in dividends on G.I. insurance early in 1950.

As to the second half of 1950, the forecasts are more guarded and some people refuse to make any predictions. Adding up what everyone says yields the suggestion that there will be a down-turn, but probably a moderate one comparable to that experienced in the first half of 1949. What you might call "moderate" is debatable. Some of the forecasters say that it will be a drop of 10 percent in the gross national product—or enough to increase unemployment from the present 3,500,000 to possibly 6,000,000.

But even the rosier picture for the first half of 1950 doesn't permeate all corners of the economy. It is expected that farm prices will fall off another 10 percent and that retail food prices will continue to decline slightly. Perhaps the most disquieting phenomenon is the continued decline in business investment. The rate of investment in new plants and equipment in the last calendar quarter of 1949 was almost $4,000,000,000 less than a year earlier, and this decline in plant investment continues. Although not a statistic, the problem of John L. Lewis also remains both a potential and actual clog on production.

Whoever else may be cautious or pessimistic, President Truman is not in the least gloomy. His State of the Union message to Congress and his Economic Report to Congress exude optimism. As Walter Lippmann put it, President Truman is "sitting on top of the world"; he "finds it comfortable and pleasant up there above the turmoil and hullabaloo"; and the poetic style of his message is "rather like that of noontime on a summer day when the air is soft and still, the sky is blue, and there are no long shadows."

But apart from the economic condition of the country, the salient fact, looming as high as the Washington monument and as extensive as the Agriculture Building is that 1950 is an election year, with all 435 seats in the House and slightly more than one-third of the places in the Senate open for contest next November. This is the most pervasive factor in the Washington scene. Remember in everything you read, in all that is said, and unfortunately in a great many of the things that will be done, there is probably more politics than profound policy.

Nowhere is this more evident than in the President's State of the Union message. Were it not for the blunt and impolite questions of how to do it and how to pay for it, the happy goals set forth in the address might be more appealing. For example, in the now famous sentence of the Message which caused an hilarious interruption during its delivery, the President proposed

> "that Federal expenditures be held to the lowest levels consistent with our international requirements and the essential needs of economic growth and the well being of the people."

As a penetrating observer commented, the technique in this Message is never to deal with problems but only with the excellent results that would be achieved if the problems had been solved.

Unfortunately, Congress has to wrestle with actualities. Mr. Truman has in effect re-submitted his Fair Deal program on which he campaigned for reelection in 1948. You may rest assured that there will be real battles in Congress on many parts of this program. The chances are, however, that the political skirmishing on some of them, such as Taft-Hartley repeal and government medical insurance, will be largely shadow-boxing. No one expects these measures to be enacted—and the debates will be largely campaign material. But on one subject there will be grim reality—spending and taxes.

Let's look first at the Federal budget—and at its form. The budget is as big as a telephone book, and in some respects about as useful in determining how much is being spent and by whom. The only thing clear about the annual Federal budget is that it is seldom wholly clear to anyone. It is a jungle of items in which track of functions is completely lost. You can tell how much each scrubwoman in each agency is paid, but to tell how much the government spends for a particular purpose is almost impossible to determine. It is just as though a canner knew how much he spent for mechanics and watchmen and labor separately by jobs for an entire year but could never determine in any one place how much it might have cost him to pack any one of the different products he processed.

One-Package Appropriation

To remedy this business defect, Congress is now talking about a so-called "one-package appropriation," which would consolidate all appropriations in one bill and enable Congress to know the over-all total of government spending. This may sound familiar to you. In the Legislative Reorganization Act of 1946, it was proposed that at the beginning of each session Congress, through a joint committee, was to establish a "legislative budget" providing a total ceiling on federal spending. Of course, it is difficult to set a ceiling before you know what particular needs will be. The result was that the ceilings were disregarded and the 81st Congress never even attempted to set one.

The "one-package appropriation" bill is superficially an attractive idea—if nobody puts any riders on it. But this kind of bill has been likened to the donkey at a children's birthday party—it is simply begging to have some tails pinned on it. Conceivably, when the "one-packet appropriation" is reported, anything else might be tied onto it, from a civil rights bill to the Brannan Plan. Not only would a legislative deadlock be possible, but the President might well be confronted with the Hobson's choice of no appropriations or signing a legislative hodge-podge.

Mr. Justice Brandeis once observed that there was no philosophy more profound than plain and simple arithmetic. This requires in most human affairs that there be at least a balance

between income and expenditure. In government, however, the cart is usually put before the horse. Programs are often devised without reference to whether they can be paid for.

If the country is as economically healthy as Mr. Truman believes, you might suppose that he would submit a budget for fiscal 1951 in which income would not only meet expenses but perhaps be adequate to retire some small portion of the national debt of $258,000,000,000. Yet the budget proposes expenditures of $42,500,000,000 for the next fiscal year against estimated revenues of slightly over $37,000,000,000. We are to go into the red by another $5,000,000,000. Even in the present fiscal year the Federal government is running $5,500,000,000 in the red. Despite the fact that business activity continues at a high level, Mr. Truman has proposed a continuing deficit for the fiscal year 1951, of over 15 percent.

Let's look at the income side of the picture, which realistically means taxes.

Last Monday the President sent to Capitol Hill his long-awaited tax message. This is one of the most remarkably astute political messages one has seen in a long time. The program is to make excise tax reductions for everybody, to soak the rich, to increase revenues by a billion dollars, to stimulate business activity, and, for the future, to balance the budget.

This is a kind of financial legerdemain which brings shivers to Republican spines. Almost everybody is to get some relief. Excise taxes on consumer items, such as toilet preparations, luggage and handbags, are to be reduced if not eliminated. No one is more aware than the President of the impact of hearing so often when making a retail purchase the unhappy phrase "plus federal taxes." Likewise excise taxes on freight, passenger travel, and long-distance telephones are to be reduced. Everyone agrees that these add to the cost of goods—and the freight tax particularly burdens producers located far away from consuming markets.

Moderate size corporations with incomes between $25,000 and $50,000—now taxed inequitably at 53 percent—are to be given a tax reduction.

Of great importance to canners—the President recommends that the loss-carry forward provision be lengthened from the present two years to five years so as to permit losses of some years to be offset by anticipated profits of later years. This is sound—and obviously attractive to most businessmen.

But the catch in these tax reductions is bluntly announced. The widely unpopular excise taxes cannot be reduced, says the President, unless the billion or more dollars in revenue they provide is made up by increased taxes.

What taxes are to be increased?

Inasmuch as 1950 is an election year, individual income taxes are not to be increased. The only exception to this is the closing of the loophole for "oil millionaires." The President urges that this is a shocking example of an unwarranted income tax advantage. The President points out that while most of the costs of drilling are deductible as expense, those deriving income from oil wells or mining are permitted large deductions from gross income for depletion of the natural resource. This system sometimes operates so that the taxpayer deducts as depletion over the years far more than his original investment and is permitted to build up capital which other businessmen find difficult to do. The President vigorously insists that for the future anyone who strikes oil should also encounter the tax collector on the same basis as other people.

Another tax loophole which he wants closed is that found in Hollywood, where movie stars temporarily create corporations for single pictures, and take their return as capital gains rather than income. Although this loophole was fairly well closed by the Treasury itself, it does not detract from the political appeal of the message.

Tax Rates

For corporations, he recommends a "moderate" increase in the tax rate. He does not tell us what he means by "moderate" and this is left to Congress.

Lastly, the President wants the gift and estate taxes to be brought into line. The message points out that the amount of gift tax a man has to pay—under the present system—is very often dependent upon how good a tax lawyer he happens to have. I might add that that's not a novel situation.

In one respect the message is not too clear. The tax reductions recommended would take effect immediately—early in 1950. The increased revenue, the President admits, in large measure, would not be immediately forthcoming. They would not result in any substantial increase in receipts for the next fiscal year—but only for future years.

In other words, there is no specific tie-up between the tax message and the estimated receipts in the budget. Nevertheless the President says his program is designed to "bring about a budgetary balance as rapidly as we can safely do so."

This political line-drive is not going to be easy for Congress to field. Many have read the message as threatening a veto of excise tax reductions unless the increases demanded are made. Congress is thus put in a cleft stick: If it reduces the unpopular excise taxes—without making corresponding increases somewhere else—it will throw the budget even more out of line—and increase the anticipated $5,000,000,000 deficit.

The tax message also points out that increased corporation taxes do not yield additional revenues until the following year. It may be that this will lead Congress to turn to the so-called Mills Plan. This is a financial shot in the arm—to put corporations on a pay-as-you-go basis.

At the present time corporations may pay their income taxes for the preceding taxable year in quarterly installments. Representative Mills of Arkansas has suggested that they be required to pay all of their taxes within six months. This would, at least once, bring in an additional $5,000,000,000 for the first six months. On paper, it might even balance the 1951 budget. It is hardly necessary to point out that if you collect all of your outstanding bills, the accounts receivable item is correspondingly reduced, and you have merely postponed your trouble to the next year.

If Congress makes tax reductions—without corresponding increases—the only way in which it can keep the anticipated deficit within $5,000,000,000—or optimistically attempt to reduce the deficit—is to cut expenditures.

On the spending side the outstanding thing about the Federal budget is its incompressibility. Let us briefly break it down and expose the difficulty.

Over 70 percent—$30,000,000,000—of the total budget is for costs resulting from the last war or for requirements relating to our future security. Thus, 32 cents of every budget dollar goes for national defense; 15 cents for veterans' programs; 13 cents for interest on the national debt which was incurred largely in World War II; and 11 cents for international programs.

What part of this can be cut? Proposed national defense expenditures are about $400,000,000 higher than last year but it is doubtful whether this item will be reduced. The President himself has suggested a cut of over $800,000,000 in veterans' services and benefits. This item can hardly be squeezed further. Indeed, both veterans' expenses and interest on the national debt are more or less fixed charges. Foreign aid has been cut by the President by $1,250,000,000. Congress may reduce this further. But the plain fact is that about 70 percent of the budget consists of items already reduced—and possibly not susceptible to much further contraction.

Of the remaining $12,500,000,000—agriculture gets about $2,200,000,000, rivers and harbors and other development of resources another $2,200,000,000, social welfare, health and security close to $3,000,000,000, hous-

ing calls for over $1,250,000,000; and the remainder of about $4,000,000,000 is used to run the government.

Despite all the talk of economy, it will take yeoman effort to make any real dent in this budget. For Congressmen lose their zeal when it comes to cutting expenditures affecting their own constituents. Even if foreign aid spending and defense appropriations are cut below the President's figures, the budget will still be out of balance.

There are few thinking people who believe the Federal government can continue to operate in the red indefinitely. In his Annual Message, the President states that his fiscal policy "is the quickest and safest way of achieving a balanced budget." Yet the social measures he has proposed will ultimately cost over $20,000,000,000 annually—in today's dollar. How a balanced budget can be obtained with a Federal program that contemplates more and more spending will be the billion-dollar question for the next few years.

It may be that with the value of the dollar remaining constant, the national production can go to $300,000,000,000, and, by another 50 years, to the new word, a trillion. This may mean an average income equivalent to $14,000 in today's dollars in goods and services. But if this trend means instead that the American people will get more and more dollars—but can buy only the same or less for them—I venture to suggest that what Lincoln said about not being able to fool all of the people all of the time will turn out to be true. Of course, the real value of government bonds—of savings, of insurance, and of the national old age payments—will be measurably destroyed. Arithmetic is not only profound and simple, but likewise inexorable in its consequences.

Apart from money matters, there will be much Congressional talk and possibly some Congressional action in what is expected to be a brief session.

The President again has recommended the Brannan Plan but most people believe that it has no chance of enactment. It will remain as a campaign issue. But whatever you may think of Secretary Brannan's proposal, do not lose sight of the continued downward trend in farm income; and do not underrate the political sagacity of the President.

The support of agriculture is by now a political promise for both parties. At the present time the Commodity Credit Corporation has about $2,000,000,000 tied up in inventories of cotton, wheat, corn, tobacco and other price-supported crops. An additional $2,000,000,000 is being spent in the current fiscal year, and you have already heard about an additional $2,000,000,000 for next fiscal year. How sums of this magnitude are to be effectively spent will ever be a critical political issue.

No one believes that the Taft-Hartley Act will be repealed by Congress.

But most people expect that Congress will expand the social security program.

As you know, the House has already adopted a bill extending old-age and survivors insurance to about 11,000,000 additional people. This would bring total coverage to 46,000,000. The Administration proposes to add another 9,000,000, including 5,000,000 farmers and 2- and 3,000,000 farm laborers. Although it is likely that the coverage of this proportion will not be achieved, it is expected that some legislation expanding the social security program will be enacted. As you know, many recently negotiated labor union contracts have provided for pension plans, financed in whole or part by employers, and largely geared to the Federal social security program. This has complicated public attitudes on social security legislation, but it will largely serve to assure the passage of this new legislation.

You are all familiar with last year's legislation raising minimum wages to 75 cents effective January 25, 1950. In all likelihood this year the Fair Labor Standards Act will not be reopened.

We are hopeful that in any tax revision which is enacted, provision will be made for the accelerated amortization of expenditures directly or indirectly made by any canner for waste disposal or any other measures to prevent water pollution.

N.C.A. before Gillette Subcommittee

Congressional interest in food prices will, I expect, continue in the election year 1950. As you know, the Senate Agriculture Committee has a subcommittee headed by Senator Gillette inquiring into the spread between producer, wholesale and retail food prices. Those of you who have not done so should read Secretary Campbell's statement to that Committee on the canning industry. It forcibly demonstrates the major role of the canning industry as a marketing outlet for canning crops and the job the industry has done for the consumer. But, most importantly, it offers in its basic information some reason for believing that whatever else happens to the economy, canned foods should continue their increasing acceptance by the American public.

In this penetrating economic analysis, Mr. Campbell has performed a notable service for the industry.

The many other fields in which there will be Congressional talk—and the few in which Congress may act—need not detain us. The Celler bill, which would prohibit one company from buying the assets of a competitor where competition may be affected in any section of the country, is expected to be passed. There will probably be increased penalties enacted for anti-trust violations, and possibly other changes in this field about which I will speak in a moment.

Yet no matter how passionately politics are played on Capitol Hill, the myriad wheels in the intricate mill of government will grind on. There are said to be over 90 rule- and regulation-making bodies in Washington. Indeed, seldom a week passes that even a veteran Washingtonian does not hear of some new one. Each bureau, commission, department, authority, administration, and agency continues and will continue to issue its quota of regulations. We can't look at all of these agencies, but we must glance today at three of them.

Only last month the Wage and Hour Division redefined what is an "executive," "administrative," or "professional" employee. With higher minimum wages, the salary test for executives was raised to $55 a week and for the other two groups to $75 a week. For the next season it would be well worth your while to examine these new definitions and determine how they apply to your operating personnel.

Perhaps the most active administrative area for the canning industry is the rule-making work of the Food and Drug Administration, and particularly the arduous hearings which it requires. The importance of food standards need not be stressed for this group. Standards of identity, minimum quality, and fill of container bite directly and immediately into every canner's operations. They control his entire packing activity, the form of his product, and his labeling.

Yet there are still many canners who have not come to understand the process by which these standards are made. Surprisingly, also, there are still some who do not appreciate that the rules are based on the *facts of record*—that black is white or black only if "substantial evidence" of even that simple fact is produced at a hearing.

During the coming year work will continue on a wide variety of these standards—on fill of container for corn; on asparagus standards; on pineapple; on tuna and on salmon.

Last week there began in Washington what are expected to be prolonged hearings, possibly lasting a year, on insecticides and fungicides. These will determine what chemicals may be used to control insect infestations and plant diseases, and what tolerances will be permitted for each pesticide, possibly on each vegetable. Canners have an important stake in these proceedings, since processing is so important an outlet for fruits and vegetables and the canner is responsible for what he ships in interstate com-

merce. As might be expected, the Food and Drug Administration has asked the canners to present for the record whatever data they may have on these questions and particularly on the possibilities of removing residues during processing.

All in all, these Food and Drug hearings have come to be an inescapably important part of the Association's work, jointly participated in by its Laboratories, Raw Products Bureau, and its Counsel. In a sense, the job of cooperating in formulating these Food and Drug regulations—in using the statutory procedure to obtain sound protection both for the consumer and the industry—has come to be an essential overhead item for the industry.

It is an area where cooperative activity through the Association is not only feasible but highly productive. As someone said in another connection —please give us the tools so that we can do the job. Make available to the Association whatever information you have. Encourage your technologists not only to follow what is going on but to participate in this important work. Ways and means of doing so are to be considered tomorrow afternoon.

As Commissioner Mason has stated, we now have a "Federal Trade Commission With a New Look." We have two new Commissioners—Mead and Carson—and there is still one vacancy.

The Commission is considerably revitalized. It is rehearing all pending cases on the troublesome question of what constitutes a brokerage payment to a buying organization, be it a voluntary or a cooperative. Indeed, on this point proposals to change the law are being discussed. The Commission is conducting a wide campaign against exclusive dealing and requirements contracts. It is still wrestling with the confusion about delivered price selling, freight absorption and the meeting of competition. Pending before it is a proposal to compromise the *Steel* case—to permit some degree of freight equalization in that industry whose pricing practices indirectly but vitally concern the canning industry.

I wish I could tell you that what I called last year the "Crystal Clear Confusion" about freight equalization and meeting competition has been dissipated.

The O'Mahoney bill designed to clarify some of this confusion has had rough sledding in Congress. Just one week ago the Senate sent back to conference the compromise conference report which had been so vigorously debated. In the meantime, absent clarifying legislation, I still hope that the Trade Commission will not consider the competitive absorption of freight by an individual canner—a reduced factory price necessarily given to meet competition—as violative of any law.

Before I leave the Trade Commission I should mention the Trade Practice Conference which will be held beginning February 3 in Washington. You may remember that back in 1932 the Commission issued Trade Practice Conference Rules for the grocery industry. These have not been revised since the Robinson-Patman Act of 1936. It is now proposed that new trade practice rules be formulated for the entire grocery industry, covering $32,000,000,000 of sales, 600,000 retailers, 6,000 wholesalers, and more than 50,000 grocery manufacturers.

Trade Practices Conference

In general, the proposed rules cover what is now embraced in the Patman Act and the Federal Trade Commission Act. Yet there are many who think that the present Trade Commission may go further and attempt to interpret in detail, and possibly to clarify, what are the limits of price discrimination, advertising allowances, and other practices.

The Association is following this proceeding; and if it develops to be of importance to the industry, will actively participate. How successful this venture may be, I do not know. I've heard of no lawyer in this field who thinks that these questions will be solved to the point where he needs fear for his future. Each of these activities of the Federal Trade Commission, however, is a matter of vital concern to canners, particularly now that aggressive merchandising is deemed so important.

Under our constitutional system, however, whatever these administrative agencies do can usually be reviewed by the Federal courts. Often in the past I have stressed that this is the third—and a vastly important —branch of our government.

Federal judges are appointed for life. In addition to having already named four Supreme Court Justices, President Truman toward the end of 1949 nominated 23 Federal District and Circuit Court Judges. By 1952, he will have named a large part of the federal bench, and few indeed will be the federal judges not appointed by either Roosevelt or Truman.

Among the most important kind of cases with which the Federal courts deal are antitrust actions. At the beginning of November over 125 cases involving government charges of antitrust violation were pending before the courts. What appears to be going on is this: In a series of decisions interpreting the antitrust laws, the Federal courts are working a substantial judicial revision of American selling methods.

You are by now familiar with the impact of the famous *Cement* case of 1948. Last June the Supreme Court handed down an opinion with a sweeping, and many think entirely novel, interpretation of the Clayton Act. This will have far-reaching ripples of effect upon pricing, price discrimination, and the buying of one company's assets by another.

In this 5-to-4 decision the Court struck down the gasoline distribution system of Standard Oil of California. It did not do so because Standard was a monopoly. It wasn't. Its dealers' contracts covered only 7 percent of the local business and 16 percent of the independent gasoline dealers.

The Court held that under the Clayton Act any arrangement for exclusive dealing, where the dealer agreed to buy and resell only Standard gasoline, would be considered "to substantially lessen competition" if any not insignificant volume of business was covered. More important, it went further: It said that if the amount of business involved was enough, the seller would not be permitted to show the actual economic effect of his selling methods. In short, the Court concluded that the antitrust laws could operate on a bare inference of illegality alone.

What results is a kind of vending machine antitrust law. If you find any kind of restrictive contract involving a not insignificant amount of business, the government can take this coin, insert it in the legal vending machine, and get a degree of invalidity. The effect of this decision will be wide-sweeping upon territorial dealers and upon all of the arrangements between a manufacturer and his distributors.

In pending cases against two of the largest can manufacturers, the California Federal Court has held that requirements contracts for purchasing containers which run for more than a year violate the antitrust laws, and that the practices of can manufacturers in leasing closing machines at less than a rental which returns a full profit is also illegal. This decision can be expected to have an important impact upon the methods by which this industry purchases its cans.

Pending before the Supreme Court at this moment, and argued last month, is another *Standard Oil* case involving the Indiana Company. This raises the basic question whether a seller can reduce his price to particular customers in order to meet competition in good faith. The Commission argues that there is no absolute right to meet competition and that a seller may do so only where competition is not injured. This adds up perhaps to saying that the right to meet competition exists only where the Trade Commission will recognize it.

Most of you, I expect, have been following the discussions of the A&P case. Its resolution will raise searching questions as to how far a distributor or retailer may integrate in the direction of owning processing

plants—and, logically, how far a processor may integrate into the field of distribution.

It is not entirely unlikely that the future will see federal courts dealing under the antitrust laws with issues of monopoly involving labor unions.

Finally, the federal courts decide constitutional questions. In this field they determine issues such as those involved in the pending case about the constitutional validity of the sweeping regulations of the citrus canning industry imposed by the Florida Citrus Code of 1949.

Perhaps you will forgive the lawyer's normal interest in these legal cases. Yet in any panoranic view of Federal government activities, few of you can neglect to keep abreast of what the federal courts—particularly the Supreme Court—do and, equally important, what they say.

Following the vast scene of American governmental activity in today's troubled world, leaves little time for contemplation. But only a glance at the passing scene thrusts upon one, even remotely philosophical, many hard questions.

Our Government—like our people—is ever dynamic. It is moving in high gear. Yet one may ask whether it might not be possible to secure better agreement on where it is going, and possibly a clearer view of our ultimate objectives.

Can we pay for everything we are doing—and want to do? If not, how does a nation of 150,000,000 make a wise selection among possibilities?

As the Committee for Economic Development has so pointedly asked, can we guard ourselves adequately for defense in total war without either surrendering our liberties or—in the name of security—foregoing the opportunity for adequate public discussion of our problems?

In his provocative book, *Modern Arms and Free Men*, Vannever Bush has told us how independent men fight out their problems of government. "From the whole seething fracas," he says, "emerge a national attitude and policy which become the guide for all who manage affairs in the public interest.

"In a free country, in a democracy," he urges that industry take "the path that public opinion wishes to have pursued, whether it leads to new cures for man's ills, or new sources of a raised standard of living, or new ways of waging war. In a dictatorship the path is the one that is dictated, whether the dictator be an individual or a self-perpetuating group."

I began by reaffirming my belief that canners are first of all citizens. From experience I know that canners, like most Americans, are independent men, I can close, with equal confidence, in the firm belief that they will play their usually effective role in resolving these vital questions.

Reports of Divisions

So as to acquaint the membership more fully with the specific details of the programs and activities conducted by the various Divisions of the National Canners Association, it was decided to include in this Convention Issue a year-end presentation that would review the work accomplished by the staff during 1949. It thus supplements the *Annual Report of the Secretary*, which has already been mailed to the membership, and was distributed again to the Directors at Atlantic City, and made available at Association Convention headquarters. Highlights of the year's work of the staff were carried in that annual report; the following Divisional reports written by each Division head go further into the detail of the several professional programs conducted in the service of the membership. In the case of the Claims Division this review is presented in the report of its Chairman before the Board of Directors, which appears on page 76.

WASHINGTON RESEARCH LABORATORY

By Dr. E. J. Cameron, Director

For several years, both the Washington and Western Branch Laboratories have been operating on the project system. Insofar as possible, the various lines of work have been identified as separate projects, which were outlined as to objective, significance and plan of procedure. This system has been of aid to the Research Committee and the Laboratory Committees both in evaluating the work proposed and in following progress through the year.

It is also an aid in visualizing the broad types of work undertaken by the Laboratories. Most of these are directly concerned with maintaining the integrity of canned foods. Certainly this is a fair characterization of investigations into cause and prevention of spoilage, process determination, microanalytical work, and numerous other activities aimed at detection and prevention of abnormal qualities in canned foods. This type of work, either in research or service, constitutes the framework of the program from year to year.

A step removed from this type of activity is what might be called descriptive studies, concerned with the identity and characteristics of canned foods. The Laboratory contributed much to the descriptive labeling program, and more recently has been intensively involved in the preparation for hearings on standards of identity, quality, and fill of container under the Food, Drug and Cosmetic Act.

A third category might be made of activities on problems incidental to the production of canned foods. Plant sanitation is largely in this group, although it also has an aspect of product protection as well as of environmental hygiene. Waste disposal is a problem definitely in this group and an important and frequently troublesome one.

Projects have been grouped in a few major divisions, namely, sanitation, waste disposal, bacteriological, processing, chemical studies, microanalytical and other, such as food standards, cooperation with the Claims Division, etc. An effort has been made throughout to strike a reasonable balance between research to develop basic information, and direct service.

The service of bacteriological field surveys was extended this year to canners of peas in Indiana, Wisconsin, and Michigan, on tomato juice in Ohio and Indiana and on corn in Ohio, in addition to a few special surveys in states near N.C.A. headquarters. In these surveys particular attention is given to new trends in plant procedure which may affect the problem of spoilage prevention. Because it is impossible to cover all products in all areas each year, the field program is adjusted from year to year to obtain as good an over-all coverage as possible. Other bacteriological projects and those of the processing division included investigations into the characteristics of spoilage organisms and development of basic processing data for both tin and glass containers.

In cooperation with the Raw Products Bureau, the Washington Laboratory has endeavored to keep pace with the situation posed by the introduction of new pesticides. The industry needs to know more about the use of these compounds on various crops, the extent to which they are removable, and what residual amounts may or may not be safely tolerated. The Laboratory has given particular attention to studies on residue detection and the validity of existing analytical methods. This topic is of special interest in view of the forthcoming hearing on tolerances for pesticides on fresh fruits and vegetables to be held by the Federal Security Agency.

In addition to furnishing direct service on microanalytical problems, the Laboratory has striven to promote the training of factory technicians in microscopic methods and to obtain a uniform understanding of the techniques involved. This is exemplified by the special courses conducted this

year as in the past with the help of Washington Laboratory personnel, in Indiana and New York.

Canned foods still have a prominent place in the series of hearings held by the Federal Security Agency to establish standards of identity, quality and fill of container. This has required additional laboratory work this year on canned corn and asparagus. In addition, the staff has cooperated with other commodity groups, notably pineapple and tuna, in the planning of preparation for future hearings.

The work on sanitation and waste disposal is discussed below, as well as developments in the N.C.A.-C.M.I. Nutrition Program. These and other phases of the work of the Laboratory are covered in more detail in the *Annual Report of the Research Laboratories*, copies of which have been sent to all members.

Sanitation and Waste Disposal

The program developed over the past five years designed to promote better canning plant sanitation was continued during 1949 but at a somewhat reduced tempo. Talks illustrated by slides were presented at four meetings. Sanitation surveys were made during the month of June for those members in Maryland, Virginia, Pennsylvania, Delaware and New Jersey who where operating on seasonal products at that time and who desired the survey. Direct service to members was rendered by correspondence. Slides pertaining to sanitation were loaned to members desiring to conduct their own sanitation meeting for factory personnel. Assistance has been rendered in the preparation of the forthcoming publication *A Sanitation Manual for Food Industries* being prepared by the Association of Food Industry Sanitarians with the assistance of the N.C.A.

The Laboratory was actively engaged in cannery waste disposal with respect to both research and direct service to individual members. The area of research was broadened by consultations with regional groups, and in some cases, active participation in the investigations undertaken. Cooperative research with Purdue University was undertaken on an anaerobic method of treating tomato and lima bean wastes in a full-scale treatment plant. Two projects involving attempts to secure improved odor control in lagooned wastes and a third project concerned with basic information on pea and corn wastes were the basis for cooperative research with the Wisconsin State Board of Health. Field tests on the control of odors at pea stacks were undertaken in Minnesota. The drive against pollution which is increasing in momentum is exemplified by the creation of Water Control Commissions, Regional Drainage Basin Commissions, enactment of new legislation and more rigid enforcement of existing regulations. Canners are urged to take cognizance of these developments and to this end, the Laboratory presented three illustrated talks on cannery waste treatment to canner groups.

Nutrition Research

Since 1942, the National Canners Association-Can Manufacturers Institute research program has been conducted through the medium of research grants to educational institutions which are outstanding in the field of nutrition. During the course of the project through 1949, 28 grants were made to nine universities and experiment stations. From this research a total of 35 manuscripts have been published while six are in preparation or have been accepted for publication.

A principal objective of the research has been to accumulate information on the nutritional values of canned foods and much of the published material is of that order. In order to make such data conveniently available to the industry and to others interested in canned food nutrition, there has been in preparation a bulletin to assemble the more important information and to interpret it for practical purposes. The proposed publication now is in its final stage of formulation and should be available for distribution by the spring of 1950. Tentative plans call for distribution to industry as well as to nutritionists, dieticians and libraries.

Newer concepts in the field of nutrition have stimulated study on the amino acid contents of protein food components, and in 1948 work was initiated to explore the occurrence of these factors in canned fish and meats. Products which were selected for assays have been analyzed in the raw (frozen) and canned condition. They included luncheon meat, whole boned ham, sardines (Pacific and Atlantic), tuna, salmon, mackerel (Pacific and Atlantic), and fish flakes. Tests were made on similar products at two universities.

The projects have been completed and the report of the two universities testify to the excellence of these high protein products, from the standpoint of the contents of the eight amino acids which are considered to be essential in human metabolism. The significance of the data will be evaluated and the results made known through the usual channels to the interested segments of the industry. A special study on the amino acid content of vegetable protein is now underway.

A current study of probable importance to the industry is in the field of dietetic canned foods. This project will evaluate the composition of a wide range of canned foods which are regarded as applicable to special dietary usage. Nearly 140 lots which include about 30 kinds of fruits and vegetables are being assembled for analysis. These products are mostly water-packed (without sugar or salt) and will be analyzed for the food fractions which are important in dietary treatments. Included will be analyses for sodium, since there appears to be a rapidly increasing demand for low sodium diets to control hypertension and renal and cardiac disorders.

The information obtained from the analyses of the dietetic packs will be assembled with other existing information of this order and should prove valuable in showing the ranges of the important dietary components that the foods will provide. As a result it should be possible to suggest well based "typical" or "average" analyses for label purposes.

WESTERN BRANCH LABORATORY

By Dr. J. R. Esty, Director

The principal effort, as in previous years, was to develop and furnish technical information of a practical nature, both general and specific, for use by the entire membership. About 20 percent of the time was spent on problems for individual members, representations at conventions and meetings, and maintaining contact with allied industries. Visual aid material compiled by this Laboratory has proved very valuable for use by canners in their plant conferences and at other meetings as well as by National Canners Association personnel in presenting illustrated talks.

Over 150 canneries were visited by members of the staff in compliance with requests from members or on field studies. These individual contacts kept laboratory personnel informed of some of the canners' problems and also enabled the staff to discuss the National Canners Association services and observe the practical developments which have been made in the various plants.

Training of factory analysts and collaborative work on check samples continue to be important parts of the program of the Western Branch Laboratory. The work on check samples during 1949 consisted of (1) thermal death time determinations on a spore suspension prepared by the laboratory, and in this study seven laboratories cooperated; (2) a demonstration of methods for determination of DDT in raw and canned food for the benefit of laboratory personnel of the baby food manufacturers, and analyzing a check sample prepared and distributed to five laboratories running DDT determinations; and (3) preparation of several samples each of tomato and spinach products and submission to various laboratories for

counting as a means of comparing the results as part of an extensive study of counting methods.

Sanitation activities continued with some change in emphasis, and the interest of the membership is shown in the continued requests for information and service. It is encouraging to note the many improvements that have been made and the plans that many canners have for further improvements with respect to sanitation. Contact was maintained with local area waste disposal projects and state activities on waste disposal and water pollution. Assistance was given to individual canners.

The activities of the technical personnel were concentrated largely on processing studies on fruits and tomatoes; obtaining industry information on canned asparagus, canned corn, and canned tuna, the products now being considered by the Food and Drug Administration for standardization under the Food, Drug and Cosmetic Act; on studies on removing insecticide residues and of developing methods for detecting traces of the newer insecticides for which no reliable analytical procedures are available; and on research to improve the methods for insect fragment counting.

The processing studies initiated in 1949 on fruits and tomatoes were for the purpose of establishing minimum processes necessary to prevent spoilage in both still and rotary cookers. Present processes are based largely on commercial experience. The work so far has involved principally heat penetration measurements and has included studies of such variables as vacuum, fill, maturity of fruit, and Brix of syrup, and, for the rotary cooker, speed of rotation. A number of fruit spoilage organisms were isolated during the canning season and these will be studied for heat resistance and growing characteristics. If any of the organisms are suitable, inoculated experimental packs will be prepared in 1950. The following fruits were studied: Apricots, whole and halves, fruit cocktail, freestone peaches, clingstone peaches, and pears.

In connection with the food standards studies, the Laboratory was represented at meetings held by the industry committees. Samples of asparagus collected by the Canners League of California for the 1950 annual fruit and vegetable cutting were examined for fiber, length of units, color, and defects, according to methods proposed for the development of asparagus standards. Approximately 130 cans of corn submitted by Northwest corn canners were examined by the laboratory according to methods contained in the proposed standards for canned corn, and a member of the laboratory staff attended the public hearing held in Washington, D. C. Arrangements were completed with the canned tuna standards committee to collaborate with the industry in developing objective tests for measuring certain quality factors.

The work on insecticide residues consisted of cooperative studies with the Department of Entomology of the University of California on apricots sprayed experimentally, using DDT, DDD, parathion, and methoxychlor, with a total of 13 different treatment variables. Each lot of this fruit was given a commercial washing treatment and canned both as unpeeled halves in water and as strained pulp. Raw samples representing unwashed, water-washed and detergent-washed fruit were analyzed in addition to the canned samples. Additional washing experiments were performed on the treated fruit in order to determine the effectiveness of various wetting agents and detergents in the removal of DDT and DDD.

The work on green beans was conducted cooperatively with the Department of Entomology of Oregon State College and consisted of analyzing samples which had been dusted or sprayed with DDT, methoxychlor, and parathion. Samples of the raw beans were taken for analysis before and after application and at harvest, which was 4 days after application. Samples of the treated beans were run through a commercial cannery and analyses were performed on the beans after blanching and after canning.

A considerable amount of time was spent in studying new analytical methods and adapting existing methods to new products. New methods include the quantitative method for methoxychlor and the qualitative test for BHC. Methods for parathion and DDT were checked for their reliability when applied to several new products.

Publications appeared in technical and trade journals on processing studies for low-acid foods in glass containers, processing of red pimientos, spray residue problems, cleaning studies and cannery lighting. The Laboratory staff also rendered important service in the writing and editing of the sanitation manual, a cooperative project with the Association of Food Industry Sanitarians. This manual contains information of general interest to operating personnel and gives many specific tests and procedures for use by sanitarians. Considerable time was spent by a member of the staff, cooperating with members of the Illuminating Engineering Society, in the compilation of a bulletin on "Lighting for Canneries." This bulletin, scheduled for distribution early in 1950, points out the advantages of good illumination, the seeing principles involved in cannery lighting, and the types of operations for which lighting recommendations must be provided.

FISHERY PRODUCTS DIVISION

By Charles R. Carry, Director

"Now we have arrived at a time when there are no more frontiers on land in the world. There is no place to get out to. We cannot any longer run away from limitations of food and space by pushing into new areas. We have arrived at the sea. That, some people say, is our new frontier remaining to be explored and exploited. There, they say, we will find the source of the food that the coming millions will need."

Thus did the first speaker at the N.C.A. Fishery Products Conference at the 1949 Canners Convention keynote the theme of the session. The speaker, Chief of the Branch of Fishery Biology of the U. S. Fish and Wildlife Service, then pointed out that fishery biologists the world over are not interested in studying, on a purely academic basis, the life history and migrations of fish, but are keenly interested in exploiting this last food frontier by learning where and how fish may be taken on a basis that will provide the most sustenance for the world, and permit the maximum utilization of the resource year after year.

The other speaker on the program, Special Assistant for Fisheries and Wildlife to the Under Secretary of State, explained how the United States government was attempting to achieve this goal by the negotiation of treaties looking toward investigation and conservation of fishery resources in which the United States—and thus the fish canning industry—has a substantial interest.

Other features of this annual special program arranged for each year by the N.C.A.'s Fishery Products Division included a film depicting the catching and processing of Maine sardines, and a comparison cutting of canned fishery products produced in foreign countries. The cutting illustrated the superior quality of canned fish exported from foreign countries over that of the canned fish retained abroad for consumption there.

Fishery Information Bulletin

The *Fishery Information Bulletin*, issued on a weekly basis to fish canner members, attempts to keep the industry informed of developments over a wide range of subjects, both of direct and indirect interest. The topics covered include such widely diversified subjects as consular reports describing efforts of German inventors to develop methods of catching fish electrically to reports of official actions taken by government agencies concerning regulation of some phase of the industry; statistics on imports and exports; Economic Cooperation Administration procurement; and new developments in biological research.

With the approval of the Fishery Products Committee, distribution of

the *Bulletin* is not limited to member canners only. Among those who receive it are six trade journals with whom N.C.A. has an exchange arrangement; faculty members at nine colleges and universities; representatives of 11 state and territorial fisheries organizations; and approximately 60 federal officials, both in Washington and in the field. The total distribution exceeds 425 copies each week.

International Affairs

To state that fish are not respectors of international boundaries is simply to state a trite but nevertheless factual condition. This being the case, it is to be expected that the fish canning industry must necessarily interest itself in international affairs to a greater degree than any other phase of the canning industry. While the Fishery Products Division has attempted to strike a balance between its activities in the field of domestic affairs as against its activities in the field of international affairs, it was unquestionably obliged to devote more time during the year to international matters.

The Director of the Fishery Products Division served as an informal advisor to the United States Delegation at the Conference leading to the adoption of the Convention for the conservation of the Northwest Atlantic Fisheries last February; he served in a similar capacity at the time of the negotiation of the Tropical-American Tuna Convention in April. For the second year in succession, he was appointed an advisor on the United States Delegation to the Fifth Conference of the Food and Agriculture Organization of the United Nations, and was selected to be one of the three Delegates to the FAO Conference on Herring held at The Hague in August. In addition, the Director has served as a member of the FAO Inter-Agency Advisory Committee, a group of government officials and representatives of national agriculture, forestry and fishery organizations, whose function it is to establish United States policy toward FAO programs.

The Director of the Division participated in many meetings concerned with legislation to implement the recently ratified tuna treaty with Mexico, the Inter-American Tropical Tuna Convention, and meetings concerned with a proposed Japanese peace treaty and related matters; and also in meetings concerned with the Pacific Oceanic Fishery Investigations into the tuna resources of the Central Pacific.

Fortunately, during the year there were no new proposals to reduce tariffs on canned fishery products, although the Department of State recently announced that there will be a new international conference during the coming year, to consider possible tariff concessions, between the United States and many other countries. It would seem that the industry again will be required to voice its objections to proposals to cut tariffs on fishery products which are sold in the United States in direct competition with items produced domestically.

Other developments in foreign fishery industries have been watched carefully to observe the possible effect on fish canner members and also to obtain information which might be of value to the members.

Domestic Affairs

Probably the most important of the domestic activities to engage the Division's attention during the past year is the proposal of the Food and Drug Administration to promulgate definitions and standards of identity, a standard of fill of container, and minimum standards of quality for canned tuna. The function of the Division in this case is purely one of coordination—seeing to it that the industry is properly informed of all developments, arranging for the appointment of the necessary committee, the bringing together of the technical experts in the research laboratory staff, counsel and the industry committee, to plan the concerted program of investigation necessary to arrive at workable, and worthwhile standards. This, however, is a continuing task that will extend over a period of at least several years. Activities thus far have been entirely of a preliminary nature.

In March, the Hoover Commission issued its long-awaited report on proposals for reorganization of government activities relating to the executive management of fisheries. Simultaneously, therewith, the Hoover Commission published the report of its special task force on Natural Resources, whose task it was to recommend the type of reorganization most likely to effectuate the purposes of the Hoover Commission. While the overall Commission did not accept in full the recommendation of its Natural Resources Task Committee, both reports recommended an improvement in the

MR. McGOVERN FILMING HIS SPEECH

Retiring President John F. McGovern was prevented from attending the Convention because his convalescence from his recent illness did not permit. To bring his message before the Convention arrangements were made to make a film of him delivering the address. The picture was made by the Reid H. Ray Film Industries of St. Paul, Minn., who brought apparatus to Mr. McGovern's home in Le Sueur. The picture above was made in the McGovern living room during the preliminary rehearsal just before the sound-film was made. Mr. McGovern is shown, seated, going over the details of the production with technicians of the film company. The result was an excellent action and sound picture, of 7½ minutes duration, which was projected at the Opening General Session to a screen on the stage in Convention Hall.

status and handling of commercial fishery activities of the federal government. In effect, both reports recommended the separation of the management of fisheries from the management of other forms of wildlife. The entire fishing industry has indicated its anxiety that either the recommendation of the Hoover Commission, or of its Task Committee be effectuated. The Division is cooperating actively with other organizations toward this goal.

In his inaugural message in January, 1949, President Truman proposed a "bold new program" for the development of economically underdeveloped countries. While this will ultimately become a program that more properly should be considered in the international field, it must for the present be considered as a domestic affair since a substantial portion of the program is being developed by government agencies and legislation to implement and finance the program still is pending before Congress. The Division has been keeping the industry informed of developments in this program and has attempted to ensure that the program will be for the purpose of developing essential supplies of protein foods for domestic consumption in the underdeveloped countries and not for entry into the world market.

The Fish and Wildlife Service, again recognizing the fish canning industry's interest in its activities, invited the Division to participate in conferences to develop the technological program of the Service in a direction which would be most helpful to the commercial fishing industry and which would represent as little encroachment as possible on actions which more properly are functions of the industry.

Field Trips

Contrary to the experience of 1948, field travel was considerably increased during the past year. A meeting of the Fishery Products Committee held in Seattle in June was called to provide means of consultation between industry representatives and the Department of State, and the Director took advantage of this opportunity to visit fish canning areas in the Northwest and California.

The sardine canning area in Maine was visited during early August, following which the Director spent about six weeks on a trip to Europe, serving as a Delegate at the FAO Conference in The Hague, and also visiting the fishing industry in Holland and other countries. Immediately upon his return, he participated in the Pacific Oceanic Fishery Investigations conferences on the Pacific Coast and met with tuna packers in California to discuss the Food and Drug tuna standards program.

Again in November he visited the Pacific Coast to participate in the annual meeting of the Association of Pacific Fisheries, the meeting of the Pacific Fisheries Conference, and a meeting of the Tuna Standards Industry Committee.

Cooperation with Other Organizations

The Division continued to take an active interest in the affairs of the Atlantic States Marine Fisheries Commission, and to participate at the invitation of its officers in meetings of the Pacific Fisheries Conference. It goes without saying that the closest degree of cooperation exists between the N.C.A.'s Fishery Products Division and the various state and local fishery associations.

Fishery Products Committee

The Fishery Products Committee met twice during the year, first at Convention time in January and again in Seattle in June, to consider important problems affecting the fish canning industry referred to in the preceding paragraphs. The Division was in frequent communication with the Chairman and other members of the Committee and is very grateful for the advice and assistance supplied so freely and so willingly by the Committee members.

HOME ECONOMICS DIVISION

By Katherine R. Smith, Director

In formulating the program of work for 1949 the Home Economics Committee set up the following objectives for the Division:

"The fundamental purpose of the Home Economics Division is the promotion of the use of canned foods by means of dissemination through all practical channels, of authentic information about canned foods and the canning industry."

The objectives of the Division are:

"1. To aid in establishing the Association and the Division as a recognized authority for authentic information about canned foods, and their preparation and ultimate consumer use.

"2. To reach ultimate consumers (the general public and all factors in food distribution) with authoritative, useful information about canned foods and their place in the national diet.

"3. To work as closely as possible with Association members in furthering their service to consumers."

In achieving these objectives, the general modus operandi of the Division is accepted to be:

"1. Dissemination of authoritative information direct to consumers through accepted channels of communication, including frequent, persistent contact with governmental, educational and related interests.

"2. Work whenever possible with other divisions of the Association in the development of practical and useable data for dissemination as indicated above.

"3. Develop liaison between the Association, the Home Economics Division of the Association, and members of the Association, through whatever channels of circulation may be deemed useful in dissemination of canned foods information.

"4. Create and circulate a recipe and use service for canned foods which will be acceptable to all types of circulation and publicity agencies, in order to extend the understanding and use of canned foods.

"5. Render all assistance possible to member organizations in their own efforts as above."

Educational Materials

The potentiality of the school field in setting up product acceptance, and in the direct influence on future homes of pupils as well as the homes of parents is generally accepted. Because the practical outlet for this type of information for an industry is its central association, the canning industry initiated an educational program when the Home Economics Division was first established in 1927. The work has been retained in the Committee's recommendations each year since then and has been expanded as the need was shown. Although there has been change in method and the type material distributed, as school requirements have changed, the objective remains the same.

A kit of teaching aids on canned foods now is in use. This general form for school material is used for about 90 per cent of present-day school materials. The Home Economics Division's materials consist of:

1. An 8-page student leaflet, which is used in the classroom and then taken home—*Canned Foods in Modern Meals.*

2. Nutrition and servings charts for the student—a take-home chart—*Canned Food Tables.*

3. Suggestion sheet of classroom projects for the teacher.

4. Recipe book for reference use in food preparation—*Tempting Recipes Using Canned Foods.*

The educational materials are sent out upon direct request of the teacher. Educational advertisements were placed in four teachers' magazines during 1949. A total of 15½ pages were used to notify teachers of canned foods educational material available for school use, as well as to highlight values of canned foods in the diet. The advertisements further serve as a public relations media.

This same material has been requested by a number of women's clubs, extension leaders, and public utility

home service departments, for use with adult women's groups.

The *Canned Food Tables* which is made up of two tables "The Nutritive Values of Average Size Servings" and "Servings per Unit for Various Canned Foods," has been supplied nutritionists, medical schools, state health departments, dieticians, restaurant managers, and homemakers. Many of the requests received from homemakers were stimulated by a release of the Associated Press which was picked up in newspapers across the country.

Menu and Recipe Service

A new school lunch recipe book was prepared and released in June. The book *School Lunch Recipes Using Canned Foods 25-50 Servings* is useful in any school lunch. It was, however, especially prepared for use in the government-sponsored school lunch program and the recipes have been developed to fit into the daily food requirements as set up by the Production and Marketing Administration of the U. S. Department of Agriculture. The book is now in use in all 48 states as well as in Hawaii and Alaska.

A potential new service of the Division was initiated with the preparation of the product recipe folder *Canned Peas for delicious recipes.* It was undertaken as the result of numerous requests for recipe leaflets for distribution by individual firms. The cost could be greatly reduced by pooling orders, and through the use of the facilities of the Division in preparation. The project was planned on a self-liquidating cost basis. Whether the service will be extended to other products depends on the success of this first folder.

Recipes developed, tested and taste-tested in the Service Kitchen were used in the following ways:

Newspaper and radio releases	90
Recipes for photographs	52
Product recipes for use in booklets, etc.	186
Recipes for Association members	86
Recipes for exclusive use of writers or editors	18

Recipe books have been supplied for use in restaurant and institutions, school lunch services, and for family meal service.

Releases and Editorials

In view of the present buyers' market, with the postwar shift in supply and demand for canned foods, the Home Economics Division has accelerated its work affecting the use of canned foods by consumers.

This acceleration is shown in the preparation and distribution of a steady flow of recipes, photographs, and other releases to newspaper and magazine food editors, and to radio people.

Work in the field of public relations and in release material has increased. In addition to the regular releases sent out monthly by the Division, numerous exclusive releases have been prepared for syndicate and other writers. Conferences have been held with food writers and editors and material supplied, as required. There was an increase in the number of manuscripts submitted to the Division for review and suggestions.

Newspaper food releases—Each month four different two-page recipe releases were sent to food editors of newspapers. This allows an exclusive release for each of four different newspapers in a city. The combined circulation for the newspapers is approximately 36,388,425.

Every second month photographs accompanied the releases. The recipes were developed in the Service Kitchen and the photographs were taken there. Either glossy prints or mats were sent according to the requirements of the food editor.

Radio releases—A two-page script on canned foods was sent out each month to about 850 radio people. In addition exclusive material was prepared for several radio broadcasters, upon request.

Summary of Bulletin Distribution

	Copies
"Canned Foods in Modern Meals" (educational 8-page leaflet)	355,000
"Canned Food Tables"	425,000
"Tempting Recipes Using Canned Foods"	28,700
"Suggested Classroom Projects"	15,500
"Story of the Canning Industry"	13,300
"Quantity Recipes Using Canned Foods"	19,000
"School Lunch Recipes Using Canned Foods"	44,000
"Canned Foods Recipes for Serving Fifty"	12,750
Miscellaneous recipe leaflets	6,155
Miscellaneous bulletins and leaflets (not recipes), publications retired, but not depleted	8,350
Total	927,755
Total copies newspaper releases	6,085
Total copies radio releases	10,200
Total	944,040
Total glossy prints sent with newspaper releases	916
Total mats sent with newspaper releases	2,800

Meetings and Business Trips

Continued and persistent personal contact with food editors, other home economists, teachers, member companies, and consumer groups is increasingly important both in the dissemination of information about canned foods, and to alert and increase the Division's visibility in these fields.

Trips were taken to 30 cities in 16 states by staff members. In addition, the following conventions and conferences were attended in 1949:

National Canners Association, Atlantic City, N. J.; Photography Symposium, New York, N. Y.; National Association of Women Broadcasters, Chicago, Ill.; Home Economists in Business, San Francisco, Calif.; American Home Economics Association, San Francisco, Calif.; Newspaper Food Editors, Chicago, Ill.; American Dietetic Association, Denver, Colorado; School Food Service Association, Washington, D. C.

Numerous talks, radio broadcasts, and one television appearance were made. Conferences with government agency food people and other related industry leaders have been held locally.

INFORMATION DIVISION

By Nelson H. Budd, Director

The Information Division throughout 1949 carried on continuous and varied functions:

(1) Supplying information through the weekly INFORMATION LETTER and special bulletins to the membership as well as to the several information media which reach the public.

(2) Assisting numerous correspondents—writers, editors, publishers and broadcasters—by personal interview, mail and telephone.

(3) Issuing press releases containing information pointing to the merits of the canning industry and its products.

(4) Helping other staff members and N.C.A. representatives in the preparation of speeches and articles and handling their distribution.

(5) Assisting other Divisions in the preparation and production of many of the Association publications, both periodical and special.

A brief chronological review of the Division's performance of these functions throughout the calendar year follows. Where the activity is recurrent every week or month, such as issuance of the weekly LETTER, and final editing of the weekly *Fishery Information Bulletin* and the monthly Home Economics newspaper and radio releases, reference to the activity is not repeated in the following month-by-month account.

January

Assisted with final three press releases of publicity campaign on canned foods nutrition begun in 1948; issued press releases on nutritive and economic benefits of canned foods based on speeches by President McGovern and Labeling Director at the Northwest Canners meeting to 167 Wash-

ington and Oregon papers, 44 radio stations, all news services and 31 trade journals; issued press release to 19 steel trade journals, 19 newspapers in steel centers and to canning trade journals, pointing to scientific soundness of canning industry as exemplified by new research headquarters; issued 6 advance press releases on Convention; published and arranged distribution schedule for official Convention program and official Directory of Hotel Rooms; assisted chairmen of Public Relations and Convention Committees in preparation of annual reports to Administrative Council and Directors; designed, constructed and installed N.C.A. Convention exhibit; finalized arrangements for assignment and equipment of 60 public rooms for various Convention events, for social and business meetings of members, and to house Association offices; prepared 71 location and directional signs for hotels and meeting halls; prepared cue sheets for conduct of Association meetings; operated N.C.A. Press and Duplicating Room where copies of 21 Convention addresses, biographies and photos of 19 speakers, and 18 news stories were duplicated and issued to the 201 press and radio representatives in attendance; further assisted press and radio in their coverage of the Convention by arranging interviews and broadcasts and supplying background information; mailed copies of Convention material to 153 other publications not in attendance; brought out, within 7 days of adjournment, 92-page illustrated issue of INFORMATION LETTER reproducing the full proceedings of the Convention; issued press release on canned foods as economical buy to 221 newspapers, all wire services and 111 radio commentators.

February

Arranged publication of reprints of Laboratory and Raw Products technical papers appearing in Convention Issue of LETTER; issued press release to 600 newspapers, wire services, and radio stations based on BLS price index showing that housewives can economize by buying canned fruits and vegetables; issued press release to 201 Ozark area newspapers, 14 radio stations, 32 trade papers, and all national wire services on speech by Labeling Director covering retail price advantages of canned foods; assisted Director of Claims Division in preparation of address on claims work before Canadian Food Processors Association and released copies to canning trade papers; edited and prepared for publication in *New York Journal of Commerce* article by Secretary Campbell showing how the canning industry benefits farmer, labor, and consumer; assisted editor of *Walla Walla (Wash.) Union Bulletin*, in collaboration with Division of Statistics, with information for publication in special edition devoted to cannery operations in Northwest; assisted Secretary Campbell in preparation of article published in the March-April issue of *The Quartermaster Review*, describing the canning industry's operations and importance in the national economy; published, from compilations made weekly throughout the year, a 12-page Annual Index of the 1948 INFORMATION LETTER volume.

March

Issued press release on President McGovern's Utah and California addresses urging canners to challenge attacks on the American free enterprise system and distributed them to 219 California and Utah papers, 39 radio stations, all national wire services, and 31 trade journals; assisted with material for lectures on canning to be delivered at University of Buffalo and University of Toronto; issued press releases on addresses at Long Beach, Calif., and Galveston, Texas, and Seattle, Wash., by Secretary Campbell and Labeling Director, citing the economy and nutritive values of canned foods, to 194 dailies and 73 radio stations in California, Texas, Washington and Oregon, all national wire services, and 41 trade journals; counseled with U. S. Employment Service regarding their proposed publicity material in recruiting farm and cannery labor; assisted Convention Committee in preparation of proposals for discussion at Chicago meetings with brokers and machinery men representatives; issued press release to 600 newspapers, wire services and radio stations, based on favorable showing of canned fruits and vegetables at retail; issued recapitulation of publicity on canned foods nutrition campaign showing use of copy by 453 publications with total circulation of 27,263,297.

April

Issued joint press release to trade papers covering decisions to hold combined Conventions in 1950 and 1951; assisted Office of the Treasurer in preparation of questionnaires for compilation of information for annual *Canners Directory;* began advance preparation of publicity schedules and copy in observance of ground-breaking for new Association headquarters; edited and prepared for publication in *New York Journal of Commerce* article by Labeling Director on importance of descriptive labeling; assisted Washington Laboratory in layout and production of *Net Contents Statements for Canned Food Labels;* in collaboration with Statistics Division, assisted advertising agency with materials for series of advertisements glorifying canned foods and canning industry.

May

Assisted in planning details of agenda for meeting of N.C.A. Board of Directors and ground-breaking ceremonies; conducted press campaign calling attention to scientific soundness of the canning industry and its products as exemplified by the new research headquarters; this campaign called for press and radio table at Board meeting and preparation and distribution of information kits containing 13 types of releases for various kind of media involved, as well as a basic general release for national wire services and special releases for the home town papers of each canner present at the ceremonies; prepared and published, within four days of adjournment, special 20-page issue of INFORMATION LETTER reproducing proceedings of Board meeting and building ceremonies; counseled with Western Branch Laboratory on details of canned foods nutrition exhibit for American Public Health Association meeting in Los Angeles; edited and prepared for publication in *New York Journal of Commerce* articles by President McGovern and Secretary Campbell covering cost factors in production, distribution and marketing of canned foods; assisted chairman of Public Relations Committee in preparation of 20-page review of N.C.A. Public Relations activities of 1948; assisted U. S. Wholesale Grocers Association with materials for release on Secretary Campbell's address at U.S.W.G.A. St. Louis meeting on increased efficiencies in both production and distribution of canned foods; assisted Division of Statistics in publication of annual Canned Food Vegetable Pack Bulletin.

June and July

Issued press release on address before Maine Canners Association by Vice President Taylor lauding industry's retail price showing and scientific soundness, to 32 Maine dailies, 14 radio stations, all national wire services and 34 canning trade papers; assisted broadcaster of Station WHEB, Portsmouth, Me., in preparation of series of program scripts on the canning industry and consumer, in collaboration with the Laboratory and Home Economics Division; assisted Division of Statistics in publication of annual Canned Fruit Pack Statistics Bulletin; counseled with Laboratory staff and printers on plans and details of publication of proposed sanitation manual; assisted Office of the Treasurer in final preparation of editorial and advertising copy for annual Canners' Directory.

August and September

Brought up-to-date all mailing stencils for the INFORMATION LETTER; prepared 3,000-word article on canning for publication in *Collier's Encyclopedia;* assisted with information on canning processes for pamphlet prepared by Harvard Business School for use of Naval Supply Corps Reserve officers; assisted in preparation of form to ascertain preliminary estimate and schedule of attendance for 1950 Convention; assisted in proofreading and final makeup of pages of

annual *Canners Directory;* counseled with Laboratory staff on plans and format for publication of proposed nutrition textbook.

October

Assisted Convention Committee and Secretary's Office in booking of speakers for 1950 Convention; contributed material to feature on canning and packing in "Other Industries" series published by *The Florists Exchange and Horticultural Trade World;* issued press release on President McGovern's speech to Florida canners urging opposition to statism, to 76 Florida newspapers, 39 radio stations, all wire services, and 33 trade journals; published legislative summary in INFORMATION LETTER, 10 days after adjournment of first session of 81st Congress, summarizing action on important measures of concern to the industry; edited and prepared for publication in *New York Journal of Commerce* an article by Secretary Campbell on importance of packaging and informative labeling; collaborated with publicity director of Canning Machinery & Supplies Association in preparation and distribution of script promoting 1950 Convention and arranged for speakers at each of the Fall meetings of state canners associations.

November

Assisted Division of Statistics with format and arrangement of published schedule of pack and stock reports for membership; issued press release on address of Secretary Campbell to Pennsylvania canners on consumer benefits furnished by canning industry, to 304 Pennsylvania newspapers, 56 radio stations, the national wire services, and 33 trade papers; assisted in preparation and distribution to trade press of address made by the Assistant to the Secretary urging canners of the Iowa-Nebraska Association to express their opinions to their legislators; counseled with Laboratory, Raw Products Bureau and Association Counsel on plans to report Food and Drug hearing on pesticides; issued press release on address of Secretary Campbell to Illinois canners showing how canning industry has improved welfare of farmer, labor and consumer, to 5 Chicago dailies, all national wire services, and 21 trade papers; assisted publisher with portions of text as well as illustrations and captions of canning industry scenes to be used in latest volume of James Truslow Adams' *March of Democracy* and in a new American history textbook; supplied information and other assistance to author of series of educational newspaper features for the Small Business Economic Foundation.

December

Designed cover, planned format and did final editing of annual Association publications—*Report of the Research Laboratories for 1949 and Report of the Secretary for 1949;* issued press releases on Vice President Taylor's addresses to Indiana and New York State canners, respectively, on sound personnel programs for cannery managements and publicization by industry of its accomplishments in the public good, to 360 Indiana and New York State newspapers, 75 radio stations, all wire services and 34 trade journals and on address by Secretary Campbell before Tri-State canners on how commercial canning expands farmers' markets, to 241 Tri-State and adjoining area newspapers, 34 trade papers, 25 radio stations, and all national wire services; assisted Tri-State Packers Association with publicity for their annual meeting in Washington; completed arrangements with Convention speakers for advance copies of their addresses, and for biographies, photos and release material for use in N.C.A. Convention Press Room; assisted with address reviewing wage-hour legislation for presentation before Georgia canners; assisted publicity director of Ohio Canners Association with material on addresses on favorable public performance of canning industry by Information Director and review of bacteriological surveys by member of Washington Laboratory staff and issued copies and press releases to trade journals; prepared and issued two advance press releases on 1950 Convention; issued seven-page INFORMATION LETTER supplement, within four days following Secretary Campbell's testimony on utilization of farm crops before the Gillette subcommittee of Senate Committee on Agriculture, reproducing text of testimony and illustrations; assisted special writer of *Changing Times,* The Kiplinger Magazine, with information and interviews for feature article on canning.

Duplicating and Mailing Service

Throughout the year mimeographing, addressographing, assembling, and mailings were performed for all Divisions and services of the Association, a total of more than 360,000 units being handled. The service required the use of approximately 340,000 envelopes, 950,000 sheets of mimeograph paper and 5,000 stencils. Material for nearly 20,000 parcel post packages was counted, assembled, wrapped and mailed, and during school months 30 to 40 bags of educational material left the office daily. Material processed and handled by the Duplicating and Mailing personnel amounted to $18,500 in postage and express charges. This unit handled the photostating of reports and bulletins, provided messenger service, and carried out a schedule of daily pick-ups of releases and other material from the government agencies for use by the INFORMATION LETTER and in many other forms of service to the membership.

LABELING DIVISION

By Happer Payne, Director

The N.C.A. labeling program made marked progress during 1949 in expanded use of formal labeling recommendations by canners and distributors on their labels and in its recognition and approval in important educational and consumer circles.

The motion picture, "Better Labels," contributed largely to both ends. As of December 31 the picture had been shown to 14,379 individuals in audiences of canners, distributors, college students, etc. The picture has found an unexpected by-product use. It has already been shown to a total of 2,710 students in college classes in marketing and to 834 students in college classes in food technology. Reports from these showings indicate the picture is genuinely useful and the picture may find continuing use in college classes.

Fifty canners have shown it to the personnel in their own organizations. Canners who have not used the picture in this way will find it just as good for this purpose as when it was first produced 15 months ago. The film may be obtained on a loan and return basis on application to the Association.

The merits of the Association's labeling program is being recognized in practical fashion by a constantly growing number of canners and distributors who are modifying their labels to conform to the program. During the year two of the largest chains and a good cross section of the industry through to representative small canners have modified their labels to include N.C.A. formal recommendations.

As in previous years the Director of the Division spent much time in travel for the purpose of label discussion with individual canners and distributors. When opportunity is provided to explain the details of the labeling program to an individual, and particularly when this can be augmented by discussing his own labels in detail, it has been found that usually he will take prompt steps to modify his labels to employ the formal recommendations. The general attitude may be summed up in the remark of one large wholesaler: "If this is the way things are going, we better get busy on our own labels and not be left behind."

Many canners took advantage of the services of the Labeling Division by submitting samples of their own labels for checking for compliance with legal requirements and for the application of the voluntary labeling developed by the Labeling Committee. This service is available at any time for all canners and distributors.

The Director's duties bring him into frequent contact not only with trade

personnel but with educators, editors, consumer leaders and others actively interested in the labeling of consumer goods.

The applications of food technology to the labeling program were recognized by the program committee of the Institute of Food Technology by extending an invitation to present a paper at the annual meeting of the Institute. In response, a paper, "Some Aspects of Food Technology to the Definitions of Label Terms for Canned Foods," was prepared and presented.

The services of the Labeling Division were extensively called on by Florida canner members in connection with the Florida citrus legislation, although the N.C.A. did not participate directly in any phase of the Florida legislation. The Florida legislature finally enacted a law requiring the mandatory grade labeling of all Florida processed citrus products or in lieu of grade on the label, the registration with the Florida Citrus Commission of brands by grade.

For lack of funds, scientific research for the purpose of expanding the Association's dictionary of recommended label terms was kept in abeyance this year. Tentative standards for the labeling of peaches and apricots for ripeness were approved in March.

The merit and the present use of the Association's recommended labeling was recognized in gratifying fashion in a new text book in the field of consumer education sponsored by the National Association of Secondary School Principals, and which was published early in the fall. Under such sponsorship this text promises to be widely used in high school courses in consumer education. The text, *The Buyer's Guide* deals with many consumer products. The four-page section on "Canned Fruits and Vegetables" devotes nearly two pages to an explanation and interpretation of the label terms now in use on many labels and which are recommended jointly by the N.C.A. and the distributors associations.

RAW PRODUCTS BUREAU

By Dr. C. H. Mahoney, Director

Work of the Raw Products Bureau in carrying out its objective of helping canners improve the quality of their raw products was continued during 1949 through the usual channels of field travel, holding special conferences, attendance at canners' schools and other canners' meetings, publications, and correspondence.

Special Conferences

In view of the serious infestation of European corn borer throughout some of the major sweet corn producing areas, two special conferences were arranged by the Raw Products Bureau in order to pursue thoroughly every possible means of controlling and eliminating this insect from sweet corn in the field and factories during 1949. It was felt that this might be accomplished in a practical manner through a combination of field sanitation, crop protection with recommended insecticides, and proper steps in the factory to eliminate contamination.

The first corn borer conference was held in February and the second in November, both at Chicago. These two-day meetings were attended by canners, their field men, and federal and state agricultural experiment station and extension workers in those states where corn borer infestation is severe. Ample opportunity was afforded for extensive discussion of the general problem by each group. Committees then were formed to prepare special reports embodying recommendations on how to organize a control program, the best insecticides to use and their application, the use of application equipment, and measures which may be used in the factory to reduce contamination. These reports have had wide distribution.

Insecticidal Residue Problems

The introduction and promotion of new organic insecticides during the past several years has seriously complicated the residue problem of the processors. Some of these insecticides have given spectacular control of insects in the field, reducing costs and lowering the possibility of insect contamination of the finished product. However, lack of sufficient information regarding the residue levels at harvest and their toxicity to humans —when these residues cannot be removed through ordinary washing operations—limit or restrict their use on foods for canning. Nevertheless it is felt that research on these and other insecticides and fungicides should be actively pursued in the hope that more effective and non-toxic compounds may be found which will be of great value to the industry.

It is the Bureau's function, in connection with the work being done on insecticides in the state experiment stations and bureaus in the U. S. Department of Agriculture, to bring to the attention of the entomologists and horticulturists in such institutions the particular residue hazards involved in the use of certain organic insecticides on canning crops. Every opportunity has therefore been taken, through attendance at technical meetings of entomologists and horticulturists, and through personal contact by telephone or by correspondence, to stress the seriousness of the canner's problem of producing processed foods which are not only free from insect contamination but from chemical residues which will satisfy all the requirements of the Food and Drug Administration.

A good deal of time has been devoted throughout the year to planning with the Laboratories, further cooperative investigations with research entomologists to obtain samples treated with various insecticides so that specific residue and flavor information could be obtained which would aid in evaluating the hazards as to the use of such insecticides.

Meetings with Canners' Agricultural Committees

In several states strong agricultural research committees from the state or regional canners associations have been organized and meetings with these groups, in conjunction with visits to the local state agricultural experiment stations, have brought about better understanding of canners' production problems on the part of research workers in these institutions. During a field trip to the West Coast which started in February and ended in April, such meetings were held in Utah, Oregon and Washington.

During this trip meetings also were held with selected groups from the Canners League of California and the California Agricultural Experiment Station to discuss the general situation with respect to insecticidal residues in canned foods.

Field Travel

Parts of the Eastern Shore area were visited during May to inspect field application of insecticides on peas. During August trips were made to western New York, and to Minnesota and Wisconsin in order to keep in close touch with growing conditions in those areas.

Canners Schools and State Conventions

During the year canners schools in New York, Ohio, and Pennsylvania were visited, and state canners' meetings or conventions were attended in Michigan, New York, Maryland, California and Utah.

STATISTICS DIVISION

By Ula Vickers, Assistant Director

To carry out its major function of furnishing the canning industry with accurate information regarding the statistical position of canned foods, the Division of Statistics collects and condenses a great variety of data and makes it available to the membership.

During the 1948-49 season, the Division compiled and issued reports on the pack of 33 fruits and 24 vegetables, in most instances showing the pack according to variety, style, can size, and by states. These reports are compiled from questionnaires returned to the Division by canners; 21,714 questionnaires were sent out in 1949 to obtain this factual information. Reports showing the relative stock position of most of these canned commodities are published each month during the shipping season. To reduce the number of questionnaires to which

canners would otherwise be asked to respond, the Division utilizes the reliable statistics issued by state and regional canners associations. A total of 66,210 pack and stock reports were mimeographed and mailed directly to canners packing these commodities. These were reproduced in the INFORMATION LETTER for the benefit of the entire membership.

This statistical material compiled and issued by the Association's Statistics Division is accepted as the reliable source of statistical information representing production of the canning industry as a whole, and is used as the basis for the compilation of many government reports. Pack figures issued by the Division are utilized by the Department of Agriculture in its annual Statistical Yearbook and by the Department of Commerce in its Statistical Abstract. The pack reports and stock reports, as well, are used in monthly reports of the Production and Marketing Administration of USDA and the Food Industry report issued by the Commerce Department.

The Division of Statistics also edits, condenses, and otherwise selects pertinent information for the use of the canner from among the numerous publications issued by government agencies. Much of this material is in the form of statistical analysis, and is distributed directly to individual canners requesting such data. Other material is published in the INFORMATION LETTER. Among the government reports which the Division furnished in this fashion during 1949 are:

From the Department of Agriculture:

- Commercial acreage for processing
- Canned meat processed in official establishments
- Quantity of poultry used in canning
- Cold storage holdings on fruits and vegetables
- Farm prices as related to the canning industry

From the Department of Commerce:

- Wholesale distributors stocks
- Exports of canned foods
- Imports of canned foods
- Reports relating to canning from the Census of Manufacturers

From the Department of Labor:

- Bureau of Labor Statistics consumer price indexes
- Retail index
- Wholesale index
- Employment and payroll index
- Hours and earnings in the manufacturing industry in relation to the canning industry

From the Federal Reserve Board:

- Index of Production

The Division's statistical material also had wide distribution among buyers and supplymen. Representing the only reliable records which show the production of the industry, in volume of cases from each geographical area, the printed, annual pack bulletins are used by food brokers, wholesale grocers, the Quartermaster Corps and other government procurement agencies, label manufacturers, and container manufacturers.

When compiled by the Division of Statistics, the reports furnished by canners and other sources also became the basic data of statistical information, presented sometimes by tables and graphs, for many speeches. Such material is of value to government agencies and national magazines, educators, legislators, and commercial journals.

Thus, the Division performs a dual service: First and foremost to the individual canner, and secondly, as a basis of general statistical information for the allied trades and the public.

Convention Proceedings

(Concluded from page 21)

stalled in its new building this Spring. Donors of this gift are the Canning Machinery & Supplies Association, whose president, J. C. Whetzel, addressed the Opening General Session in a brief presentation ceremony (see page 28).

The Association resolutions, prepared by the N.C.A. Resolutions Committee were brought in at the closing general session by Chairman Ralph O. Dulany and voted. They are reproduced on page 74.

The N.C.A. general program sessions on Saturday morning and Sunday afternoon presented four able speakers in Franklin J. Lunding, president of Jewel Tea Company; Secretary of Commerce Charles Sawyer; Clarence B. Randall, president of Inland Steel Company; and Dr. Detlev W. Bronk, chairman of the National Research Council and president of The Johns Hopkins University. All of these addresses were widely publicized to the press covering the Convention at Atlantic City and are reproduced in this report of Convention proceedings.

Other Association Meetings

Certain other associations held meetings during the Convention period. The National Preservers Association held two general sessions and a technical session on Thursday and Friday and presented interesting and pertinent programs.

The National-American Wholesale Grocers Association was in session at the Ambassador Hotel from Saturday through Tuesday, with programs of speakers, conferences and special features including an exhibit of grocery products.

The Canned Pea Association heard reports of its promotional publicity and merchandising program for 1950 and elected new directors.

The officers elected for service in 1950 by these and other groups in the trade during the Convention are listed on page 73.

FOOD AND DRUG PESTICIDE TOLERANCE HEARINGS

Summary of 1,000 Pages of Official Record

This is a summary of the first eight days of proceedings which were underway while the industry was in Convention at Atlantic City. The hearings were the subject of several meetings and papers presented elsewhere in this issue and this summary, while not a part of Convention proceedings, is included to enable members to refer to it along with the other published material on pesticides carried herewith. The summary was prepared by Association Counsel and staff.

On January 17, 1950, the Insecticide Tolerance Hearings under the auspices of the Food and Drug Administration of the Federal Security Agency began in Washington, D. C. This summary covers the first eight days of the Proceedings and is a condensation of approximately 1000 pages of the official record.

As had been previously announced in the hearing schedule, these first weeks of the hearings have consisted of testimony by USDA personnel on the question of necessity for the use of insecticides. This testimony was begun by Dr. F. C. Bishop, Assistant Chief of the Bureau of Entomology and Plant Quarantine and Director of Research, USDA. He gave an introductory outline of the damage caused by insects, the necessity for their control and the over-all use of insecticides in accomplishing this control. Dr. Bishop was followed by a succession of Bureau of Entomology and Plant Quarantine personnel who discussed in detail various fruits and vegetables, the insects that attack them and their control measures.

Without exception, they discussed and then discarded as being inadequate such measures as culture control, parasitic control, and bait traps. Experience has proved that insecticides are the most successful and effective means of control.

The detailed testimony was begun by Dr. B. A. Porter, director of the Fruit Insect Investigation Division of the Bureau of Entomology. Dr. Porter discussed the apple insects such as borers, scale and codling moth as they are found in the eastern United States. He said that methods of control of the codling moth other than spraying have been tested. Such methods include light traps (not very effective and quite expensive), bait traps (infestation was reduced by 1/3 —spraying was still necessary), parasites (reduced infestation by 50 percent), and using resistant varieties (complete worm resistant varieties do not exist). Because these methods were not sufficient, spraying was a necessity. Lead Arsenate and nicotine bentonite have been used as sprays for years but DDT is replacing them. While DDT has proved to be an effective control of the codling moth, Dr. Porter said its use was not an unmixed blessing. It eliminates so many natural controls in the form of other parasitic insects that resulting infestations occur of new types such as the European Red Mite and Red Banded Leaf Roller. Dr. Porter introduced an exhibit of tests showing the use of DDT on apples. The particular tests as introduced by Dr. Porter showed residues in almost every case of less than 7 ppm.

Other members of the division spoke in the same tenor concerning fruits in differing localities. Dr. Newcomer, who is stationed at Yakima, Washington, discussed the insect problems of the Pacific Northwest. He said that DDT has proved to be the best control of the codling moth of any insecticide used to date. Tests of other insecticides such as Parathion, Toxaphene and EPN as supplementary controls to DDT and as controls of insects which are immune to DDT have been promising.

Both Dr. Porter and Dr. Newcomer discussed pears and the insects such as codling moths, pear psyllas and red spiders which attack this fruit crop. Dr. Porter said that in most respects the behavior of the codling moth and the methods of its control are practically the same as they are on the apple. He said that in the Hudson River Valley ground derris root in an oil spray and parathion have been found to be effective controls of the pear psylla. Dr. Newcomer said among the insecticides tested for control of the psylla in the Pacific Northwest that both rotenone and toxaphene had been quite effective and had been fairly effective against red spiders. Both witnesses stressed the fact that experiments and investigations into pear insect problems are continuing. Dr. Newcomer also outlined the damage caused by the cherry fruit fly but could give no data on control measures or residues because that experimental work is being done by State stations.

O. I. Snapp, who is stationed at Fort Valley, Georgia, discussed peaches and the insects which attack them such as the plum curculio, the peach tree borer, San Jose scale and various sucking bugs. G. W. Still, stationed at Sandusky, Ohio, gave a statement on Eastern Grape Insects and J. E. Fahey, stationed at Vincennes, Indiana, presented a statement on orchard insects in the Mississippi Valley. It was their common judgment that modern insecticides are a necessity for profitable fruit production and that a variety of insecticides must be available for the many different insects which create problems for growers. Among the fruit insects they discussed were the following: codling moth, wooly apple aphid, European Red Mite, pear psylla, plum curculio, red spiders, oriental fruit moth, peach tree borer, cherry fruit fly and grape insects.

The second group of entomologists to speak was composed of members of the Division of Truck Crop and Garden Insect Investigation under the direction of W. H. White. They discussed leafy vegetables (globe artichoke, asparagus, beet greens, broccoli, brussels sprouts, cabbage, cauliflower, celery, chard, swiss chard, collards, endive, kale, kohl-rabi, lettuce, mustard greens, onions, rhubarb, spinach, Tampala and turnip greens), vegetables which bear fruit (beans, lima and snap, cucumber, cantaloupe, squash, pumpkins, eggplant, mushroom, okra, peas, black-eyed peas, pepper, edible soybeans and tomatoes), and small fruit crops (blackberries, boysenberries, dewberries, loganberries, raspberries, youngberries and strawberries), and their insects. W. J. Reid, who is stationed at Charlestown, South Carolina, gave a statement concerning cole crops such as cabbage, brussels sprouts, broccoli and cauliflower in general and cabbage in particular and concluded that insecticides are a necessity. For example, without insecticides to control the cabbage aphid, few crops of cabbage and broccoli could be grown. Other vegetable division people who spoke were Roy E. Campbell, of the USDA Laboratory at Alhambra, California, H. C. Mason and F. F. Smith from Beltsville, Maryland, W. E. Fleming and T. E. Bronson, who is stationed at Madison, Wisconsin.

Mr. Campbell gave testimony on cole crop and tomato insects. He described the damage to tomato crops caused by the tomato fruitworm and said that fresh tomatoes in California have to have less than three percent of the tomatoes infected, or they are rejected by the inspectors. And if the tomatoes are going to the cannery, not more than ten percent are permitted to be infested or have evidence of worm damage, or they are rejected. Mr. Campbell also described the tomato pinworm, russet mites, leaf miners and said that for successful control of all these insects, insecticides are necessary. Mr. Mason discussed snap and lima beans and their insects; Dr. Smith discussed greenhouse insects; Dr. Fleming testified concerning the Japanese Beetle, its characteristics, its crop damage and the need for insecticides in controlling it, and T. E. Bronson testified on control of the pea aphid on canning peas and other insects affecting truck crops.

The over-all import of the entomologist's testimony gave emphasis to Dr. Bishop's points that no one insecticide is the complete answer to the insect problem and that reasonable but safe tolerances which will not stifle research and further development in the insecticide industry are necessary. This development has already seen change from the arsenicals and nicotines to the chlorinated compounds and the organic phosphates.

Of interest to the canning industry was the fact that the FDA counsel showed continuous interest in the problem of residue removal prior to commercial processing. Most of their questions remained unanswered because the witnesses, with only four exceptions, were either entomologists or pathologists and concerned primarily with insects and plant diseases and had done little work on residue removal.

Dr. Newcomer did introduce an exhibit which showed that washing of apples removed 75 percent to 98 percent of lead arsenate and 40 percent to 98 percent of cryolite. Fruit con-

taining 4.4 ppm of DDT prior to 10 washings in various materials had removal results of about 50 percent. Dr. Snapp presented evidence that brushing of peaches could remove various residues to a considerable extent. Mr. Campbell, of the USDA Laboratory at Alhambra, California, said that market tomatoes are not washed because to do so would be impractical, but that canning tomatoes were washed and, according to experimental work of others, any residues that might exist were removed. Mr. T. E. Bronson, a USDA entomologist stationed at Madison, Wisconsin, was questioned as to whether or not there would be a DDT residue removal problem on processed peas and while he indicated that there would not be, he presented no supporting evidence of the opinion.

Mr. William A. Baker, Assistant Leader of the Division of Cereal and Forage Insect Investigations, Bureau of Entomology, USDA, gave a statement concerned primarily with insects (European Corn Borer, corn earworm, Japanese Beetle, and grasshoppers) which are injurious to sweet corn. He said that the insects presented two problems to producers of canning corn, actual crop losses due to the insects and the hazard of contamination of the canned product when processing infested corn. Mr. Baker said that sweet corn could not be raised profitably in the south without the use of insecticides. Of the insecticides which have shown promise in controlling these insects, Mr. Baker listed DDT, Ryania, Rotenone, Nicotine and Parathion. DDT and TDE have given better control of the earworm than the older control measures which used mineral oils fortified with pyrethrum. Mr. Baker pointed out that if the insecticides are not used there is danger of whole crops being rejected by canners because of infestations.

Following the conclusion of the testimony by the entomologists, the Bureau of Plant Industry, Soils and Agricultural Engineering, USDA presented a series of statements upon the need for the use of fungicides.

Dr. J. R. Magness, Chief of the Division of Fruit and Vegetable Crops and Diseases, explained the use of growth chemicals. He said hormone chemicals are used to facilitate growth and overcome grower problems. They are sprayed on the fruit and foliage of apples, pears and other citrus fruit trees shortly before harvest to retard abscission and dropping of the fruit. Another use is upon figs and pineapple to retard their maturity and cause consequent increased growth and size. He gave no residue data other than a theoretical maximum quantity of under one-tenth part per million. Dr. Magness also gave an overall picture of the use of the following fungicides: copper compounds, sulfur compounds, dithiocarbamates, organic mercury compounds, quinones and naphthoquinones. He said most fungicides are protective rather than curative and are applied prior to the attack of plant diseases rather than after.

One of the general points of the Bureau of Plant Industry testimony was that fungicides are often applied in such a way that residue problems are minimized. For example, strawberries, blackberries and raspberries are sprayed before the fruit exists and so there can be little chance of residue. In the nut crops, including Almonds, Filberts, Pecans and Walnuts, the fungicides are deposited upon an inedible husk which either opens and allows the nut to drop or is removed as a part of the harvesting operation. There is no residue problem. It was agreed that fungicidal applications to other fruits and vegetables might present a residue problem but the Bureau has no such data at this time.

Dr. Magness was succeeded by two senior pathologists in the Bureau of Plant Industry, Mr. J. C. Dunegan, who discussed fungicides and fruits, and Dr. S. P. Doolittle, who discussed them in relation to vegetables. They amplified Dr. Magness' statement and discussed the specificities of the various fungicides.

In addition to the statements by the entomologists and plant pathologists there was testimony by the USDA Bureau of Entomology chemists from the Beltsville Laboratory under the direction of Dr. H. L. Haller. Representatives of the NCA Laboratory were present during this testimony. Dr. Haller first described in general the work done on residue determination with both the natural and synthetic insecticides. He stated that until recent times the principal problems of residue had been with lead, the arsenicals and flourine but that the development of the chlorinated hydrocarbons and organic phosphates had magnified the problem greatly. His testimony touched briefly on the various methods of residue determination of the newer insecticides. They were discussed in more detail by members of his staff.

Mr. Carter of the Beltsville Laboratory then described methods of residue analysis for the chlorinated hydrocarbons. Among methods mentioned were:

(1) Labile chlorine determination

(2) Total organic chlorine determination

(3) Schechter-Haller colorimetric method

(4) Stiff & Castillo colorimetric method as modified by Clayborn

He pointed out that in determining the total organic chlorine present the particular chlorinated hydrocarbon used could not be identified. The Schechter-Haller method was stated to be specific for DDT, when DDT is differentiated from TDE (DDD) by the Stiff & Castillo method as modified by Clayborn.

Mr. S. A. Hall of the Beltsville Laboratory followed Mr. Carter and he dealt with the analytical methods that had been developed for the organic phosphate componds. The Averell and Norris colorimetric method was described as an effective method for Parathion which will also detect EPN residue but will not, it was stated, distinguish between the two. He stated that there was little residue problem involved with other organic phosphates such as HETP and TEPP which are water soluble and unstable. On cross examination he indicated that although there have been some reports of translocation of Parathion into growing plants his experiments to date had given no indication of such translocation.

Finally Mr. C. V. Bowen of the Beltsville Laboratory discussed residue determination of BHC and in particular the gamma isomer known as Lindane. Various methods were discussed and the Davidow and Woodward Ultra-Violet Spectro-Photometric method, was stated to be specific for Lindane.

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